Emerson®

SERVICE MANUAL

Sec. 1: Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

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- Exploded views
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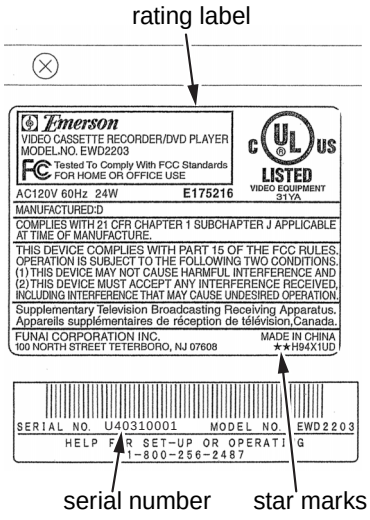
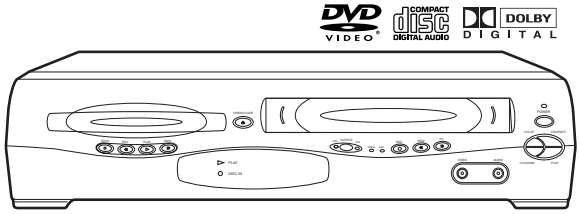
This service manual is for the EWD2203 and EWD2003 Updated Version, which the serial numbers are later than U40310001 (EWD2203) or U44310001 (EWD2003).
These models differ from the models with the previous EWD2203 or EWD2003, and that star marks (★) are printed on the rating label are their applicable models. For the rating label on the rear panel, refer to right (example: EWD2203).

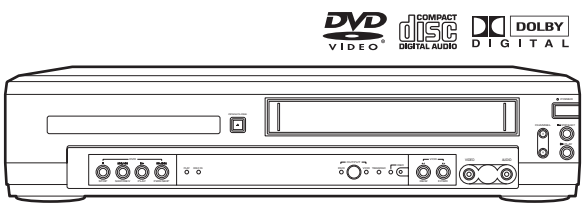


DVD PLAYER & VIDEO CASSETTE RECORDER

EWD2203



EWD2003



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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MAIN SECTION

DVD PLAYER &
VIDEO CASSETTE RECORDER

EWD2203/EWD2003

Sec. 1: Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

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SPECIFICATIONS

< VCR Section >

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	µsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

< DVD Section >

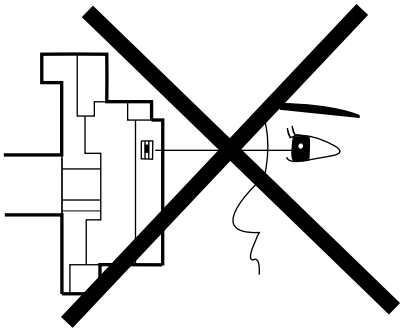
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. Video Output	75 ohm load	Vpp	1.0	± 0.1
2. Coaxial Digital Out	75 ohm load	mVpp	500	± 100
3. Audio (PCM)				
3-1. Output Level	1kHz 0dB	Vrms	2.0	
3-2. S/N		dB	100	
3-3. Freq. Response				
DVD	fs=48kHz 20~22kHz	dB	± 0.5	
CD	fs=44.1kHz 20~20 kHz	dB	± 0.5	
3-4. THD+N				
DVD	1 kHz 0dB	%	0.05	
CD	1 kHz 0dB	%	0.003	

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
3. Load imp. : 100 K ohm
4. Room ambient : +25 °C

LASER BEAM SAFETY PRECAUTIONS

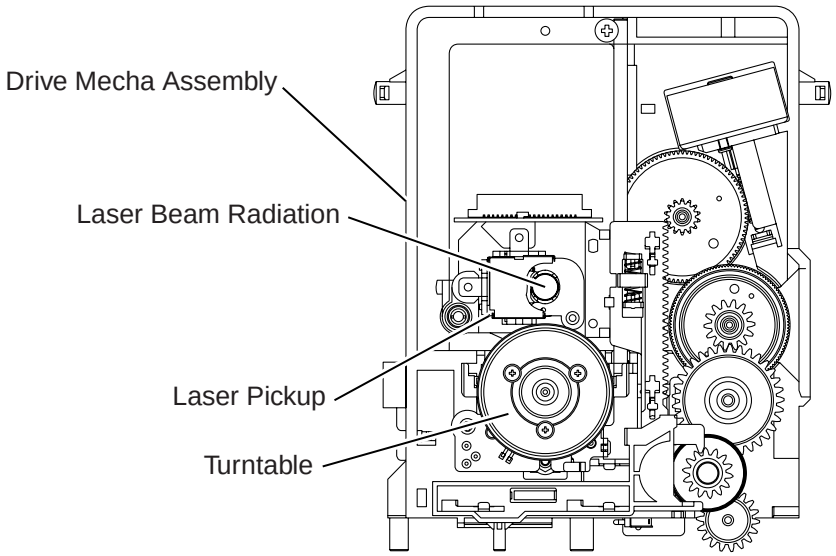
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced**.**

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')
120 V	≥ 3.2mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

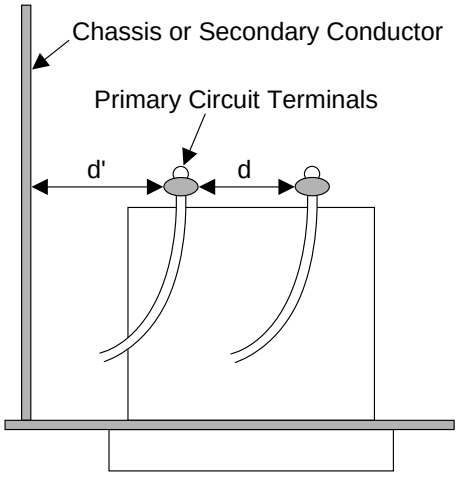


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

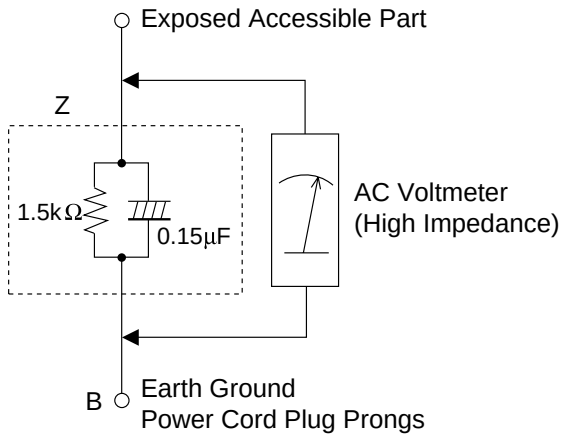


Fig. 2

Table 2: Leakage current ratings for selected areas

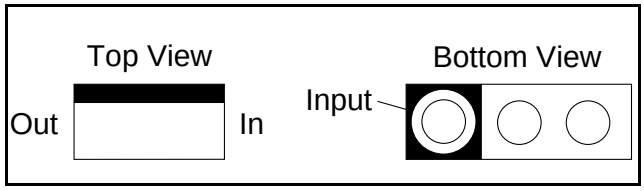
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

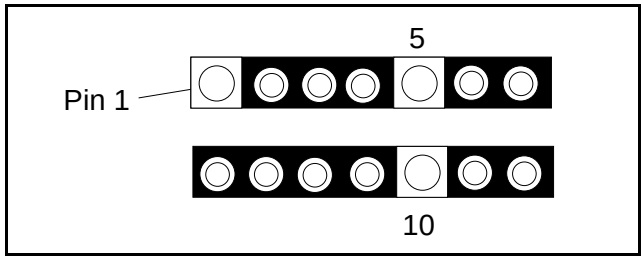
STANDARD NOTES FOR SERVICING

Circuit Board Indications

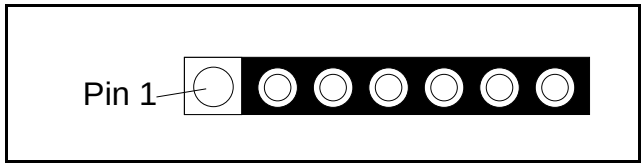
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

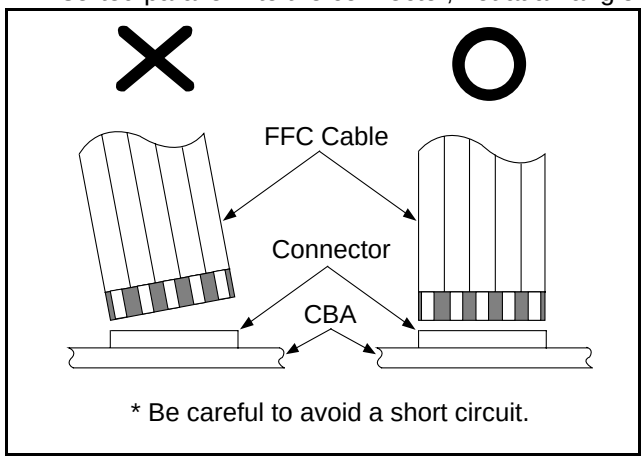


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:.

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

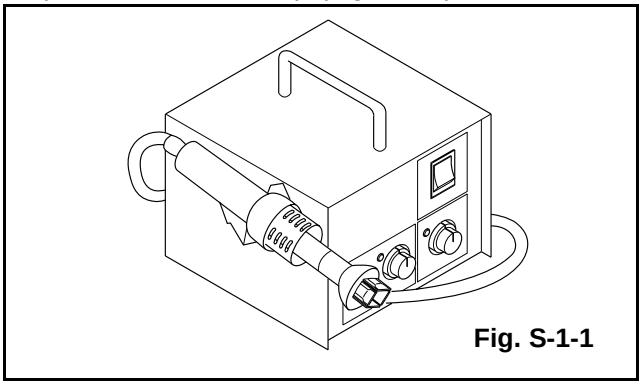


Fig. S-1-1

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Caution:

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

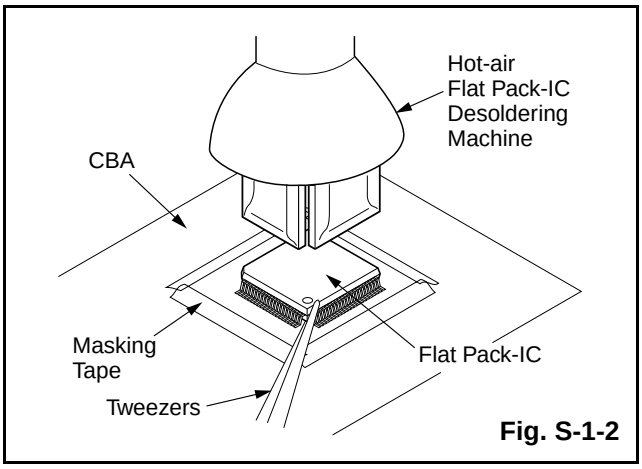


Fig. S-1-2

With Soldering Iron:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

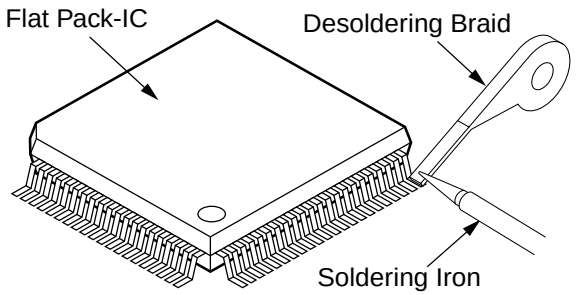


Fig. S-1-3

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

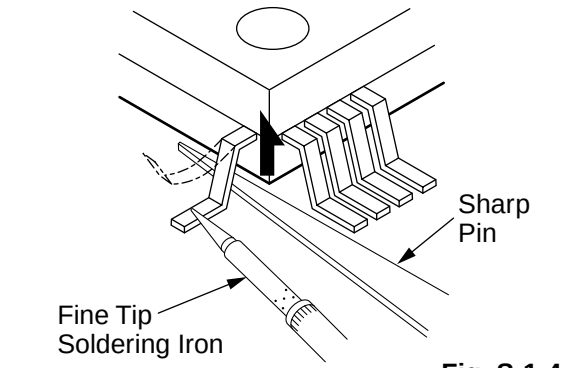


Fig. S-1-4

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note:

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

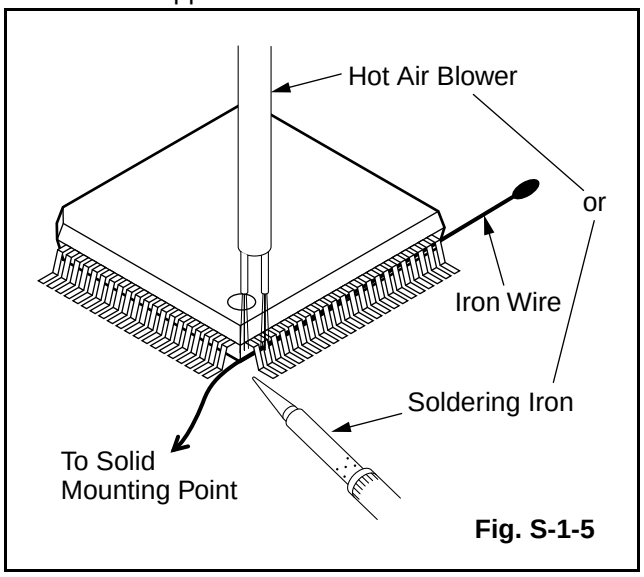


Fig. S-1-5

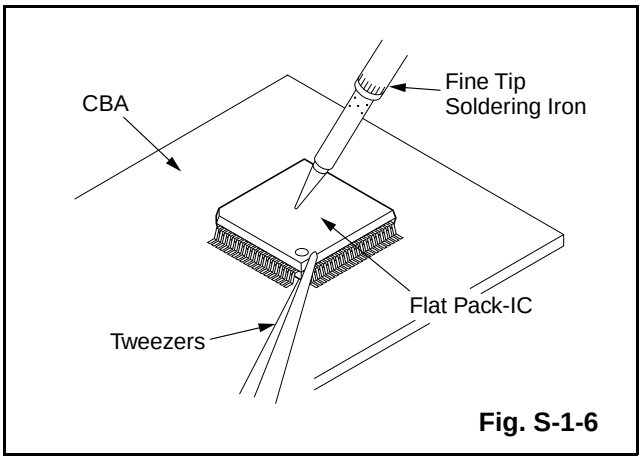


Fig. S-1-6

2. Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

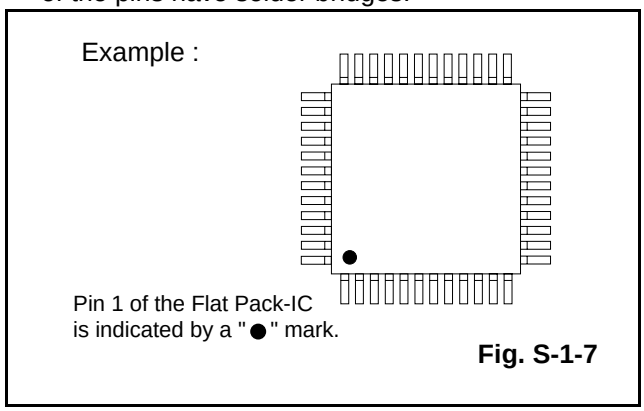


Fig. S-1-7

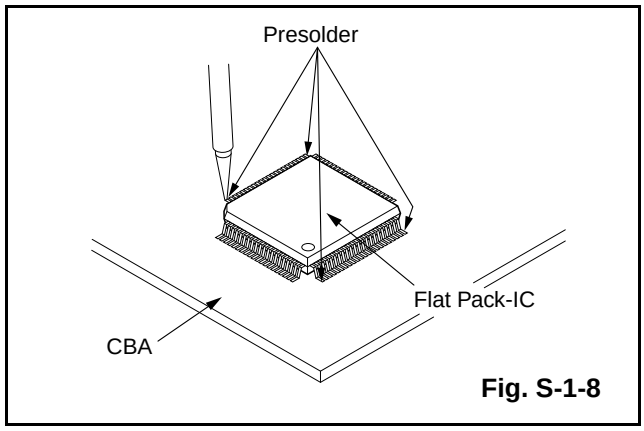


Fig. S-1-8

Instructions for Handling Semi-conductors

Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

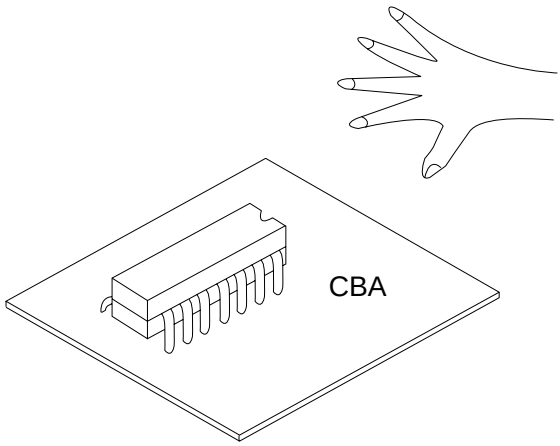
1. Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

(1) Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

< Incorrect >



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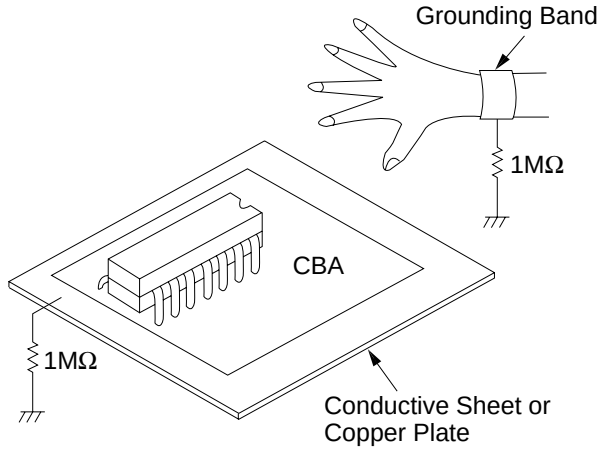


PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (SENSOR INHIBITION) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

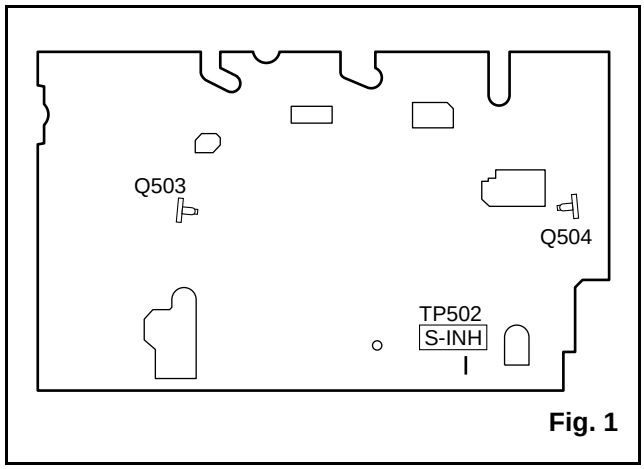


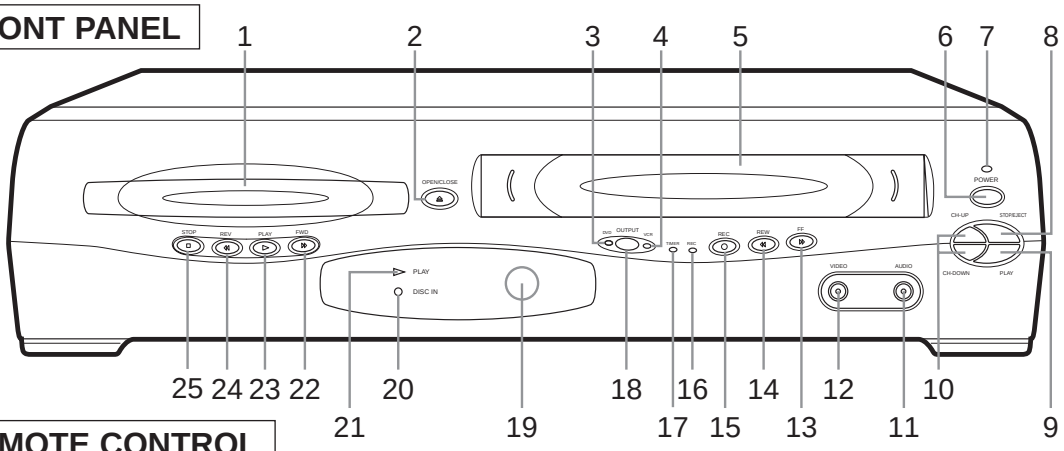
Fig. 1

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

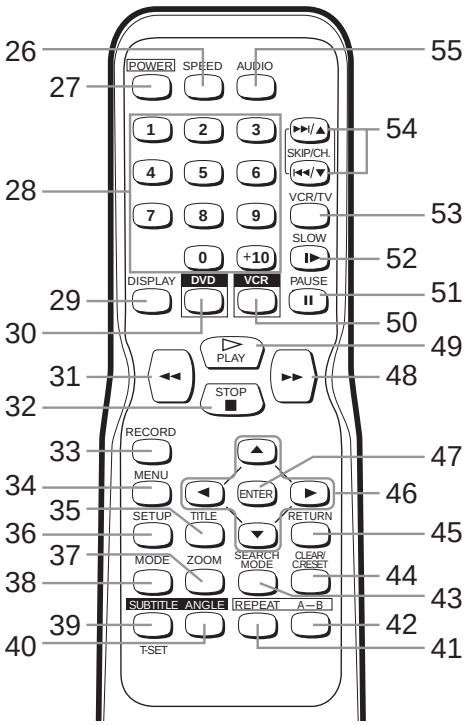
OPERATING CONTROLS AND FUNCTIONS

[EWD2203]

FRONT PANEL



REMOTE CONTROL



1. **Disc loading tray**
2. **OPEN/CLOSE Button**
   Press to insert discs into or remove them from the tray.
3. **DVD OUTPUT Light (Green)**
   This light appears when the DVD output mode is selected. You can only watch DVDs when the green DVD OUTPUT light is on. To make the green DVD OUTPUT light come on, press DVD on the remote control or OUTPUT on the front panel.
4. **VCR OUTPUT Light (Green)**
   This light appears when the VCR output mode is selected. You can only watch tapes when the green VCR OUTPUT light is on. To make the green VCR OUTPUT light come on, VCR on the remote control or OUTPUT on the front panel.
5. **CASSETTE COMPARTMENT**
6. **POWER Button**
   Press to turn the power on and off.
7. **POWER Light (red)**
   Light appears when the power is on.
8. **STOP/EJECT Button (VCR)**
   EJECT
   Press to remove the tape from the VCR.
   STOP
   Press to stop the tape motion.
9. **PLAY Button(VCR)**
   Press to begin playback.
10. **CH-(UP/DOWN) Buttons**
    In VCR mode, press to change TV channels on the VCR; press to adjust the tracking during normal or slow motion playback; press to remove vertical jitter in a Still picture.
11. **AUDIO In Jack**
    Connect an audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.
12. **VIDEO In Jack**
    Connect a video cable coming from the video out jack of a camcorder, another VCR, or a video source (laser disc player, camcorder, etc.) here.
13. **FF Button (VCR)**
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback. (Forward Search).
14. **REW Button (VCR)**
    Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
15. **REC Button**
    Press once to start a recording. Press repeatedly to start a One-Touch Recording.
16. **REC Light**
    Light appears during recording.
17. **TIMER Light**
    Light appears when the DVD/VCR is in standby mode for a timer recording or during a One-Touch Recording. It flashes if T-SET is pressed for a timer recording, but there is no tape in the DVD/VCR. It flashes when all timer recordings or One-Touch Recordings are finished.

18. OUTPUT Button

Press to select DVD mode or VCR mode.

- You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

19. Remote Sensor Window

20. DISC IN Light (green)

Light appears when a disc is in the DVD Player.

21. PLAY Light (green)

Light appears during Disc playback.

22. FWD Button (DVD)

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

Press to skip Chapters or Tracks.

23. PLAY Button (DVD)

Press to begin playback.

24. REV Button (DVD)

Press to view the DVD picture in fast reverse motion or to reverse playback of an Audio CD.

Press to skip Chapters or Tracks.

25. STOP Button (DVD)

Stops operation of the disc.

26. SPEED Button

Press to select the VCR's recording speed (SP or SLP)

27. POWER Button

Press to turn the power on and off.

28. Number Buttons

- **DVD mode**

  Press to select numbered items in a menu.

  +10

  Use this button to enter number 10 and above.

- **VCR mode**

  Press to select TV channels on the VCR.

  To select channels, enter channel numbers as a two-digit number for the quickest results. For example, to select channel 6, press 0 then 6.

29. DISPLAY Button

- **DVD mode**

  Press to access or remove the display screen during DVD or Audio CD playback.

- **VCR mode**

  Press to access or remove the VCR's on-screen status display.

30. DVD Button

Press to select DVD mode for the remote control.

- You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

31. ◄◄ Button

- **DVD mode**

  Press to view the DVD picture in fast reverse motion. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the reverse speed of slow motion.

- **VCR mode**

  Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).

32. STOP Button

- **DVD mode**

  Press to stop the disc motion.

- **VCR mode**

  Press to stop the tape motion.

33. RECORD Button

Press once to start a recording.

34. MENU Button

- **DVD mode**

  Press to display the menu of the Disc.

- **VCR mode**

  Press to access the VCR menu.

35. TITLE Button

36. SETUP Button

Press to enter DVD player setup mode.

37. ZOOM Button

Enlarges part of a DVD-reproduced image.

38. MODE Button

Activates program playback or random playback mode when playing CDs or MP3. Sets Black level and virtual surround.

39. SUBTITLE Button

Press to select the desired subtitle language.

T-SET Button

Press to put the VCR into standby mode for a timer recording.

40. ANGLE Button

Press to change the camera angle to see the sequence being played back from a different angle.

41. REPEAT Button

Repeats playback of the current disc, title, chapter or track.

42. A-B REPEAT Button

Repeats playback of a selected section.

43. SEARCH MODE Button

- **DVD mode**

  Press to access or remove the Search display, which allows you to go directly to a specific Title/Chapter/Track/Time.

- **VCR mode**

  Press to perform a Time Search or an Index Search.

44. CLEAR/C.RESET Button

- **DVD mode**

  Press to reset the setting.

- **VCR mode**

  Press to reset the counter. Press to exit from the MENU screen.

45. RETURN Button

- **DVD mode**

  Returns to the previous operation.

46. Arrow Buttons

Use when making settings while watching the display on a TV screen.

- **DVD mode**

  Moves the cursor and determines its position.

- **VCR mode**

  ▼/▲Buttons

  Press to enter digits when setting program (For example: setting clock or timer program). Press to select the setting modes from the on screen menu.

  ►Button

  When setting program (For example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input. Press to determine the setting modes from the on screen menu. Press to add or delete channel numbers during channel preset.

◄Button

Press to cancel a setting of timer program. Press to correct digits when setting program (For example: setting clock or timer program). Press to add or delete channel numbers during channel preset.

47. ENTER Button

- **DVD mode**

Press to accept a setting.

48. ►► Button

- **DVD mode**

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

- **VCR mode**

Press to rapidly advance the tape, or view the picture rapidly in forward during playback (Forward Search).

49. PLAY Button

- **DVD mode**

Press to begin playback.

- **VCR mode**

Press to begin playback.

50. VCR Button

Press to select VCR mode for the remote control.

- You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

51. PAUSE Button

- **DVD mode**

Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step (or one frame at a time).

- **VCR mode**

While recording, press to temporarily stop the recording (pause). Press a second time to resume normal recording. You can not pause a One-Touch Recording. Or, press during tape playback to freeze the picture. Press to advance the picture one frame at a time during still mode.

52. SLOW Button

During tape playback, press to view the video tape in slow motion. To return to playback, press PLAY. This button does not affect DVD playback.

53. VCR/TV Button

Use to select VCR or TV position.

- **VCR Position**

To view playback, to monitor video recording or to watch TV using the VCR tuner.

- **TV Position**

To watch TV or to view one program while recording another.

54. SKIP/CH. Buttons

- **DVD mode**

Press to skip Chapters or Tracks.

- **VCR mode**

Press to change TV channels on the VCR.

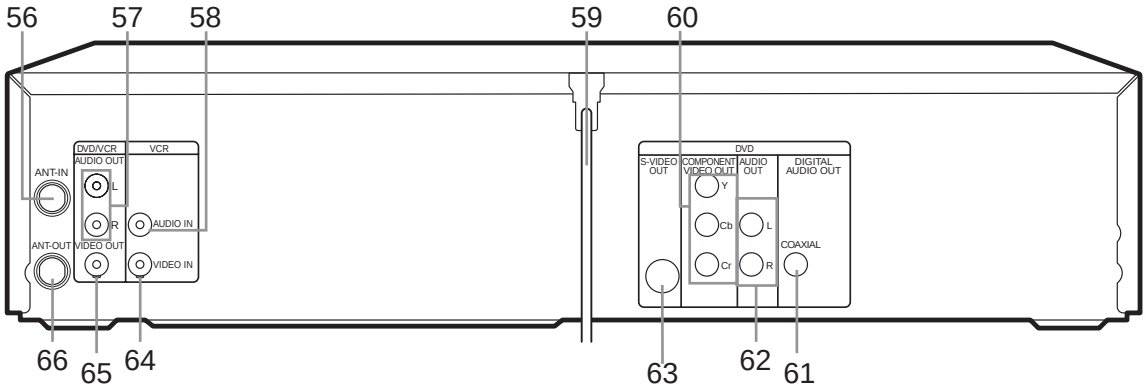
55. AUDIO Button

Press to select a desired audio language or sound mode.

Notes

- To use the remote control to operate the DVD/VCR COMBINATION UNIT and its features, press DVD on the remote control before pressing other DVD operation button. Verify that the green DVD OUTPUT Light is on.
- To use the remote control to operate the VCR and its features, press VCR on the remote control before pressing other VCR operation button. Verify that the green VCR OUTPUT Light is on.

REAR VIEW



56. ANT-IN (Antenna In) Jack
Connect your antenna, Cable Box, or Satellite decoder box.

57. DVD/VCR AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment.

58. AUDIO IN Jack
Connect an audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.

59. AC Power Cord
Connect to a standard AC outlet to supply power to the DVD/VCR COMBINATION UNIT.

DVD Playback only

60. COMPONENT VIDEO OUT Jacks
Connect optional component video cables here and to the component Video In jacks of a television.

61. COAXIAL Jack
Connect an optional coaxial digital audio cable here and to the Coaxial Digital Audio In jack of a decoder or audio receiver.

62. DVD ANALOG AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment (DVD only).

63. S-VIDEO OUT Jack
Connect an optional S-Video cable here and to the S-Video In jack of a television. (DVD only).

64. VIDEO IN Jack
Connect a cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

65. DVD/VCR VIDEO OUT Jack
Connect the yellow video cable (supplied) here and to the TV's Video In jack.

66. ANT-OUT (Antenna Out) Jack
Use the supplied RF coaxial cable to connect this jack to the ANTENNA IN Jack on your TV.

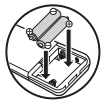
Notes
- The S-VIDEO OUT jack, COAXIAL jack, and COMPONENT VIDEO OUT jack are only useful in DVDmode.

Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

LOADING THE BATTERIES

1. Open the battery compartment cover.

2. Insert two AA batteries (supplied), with each one oriented correctly.

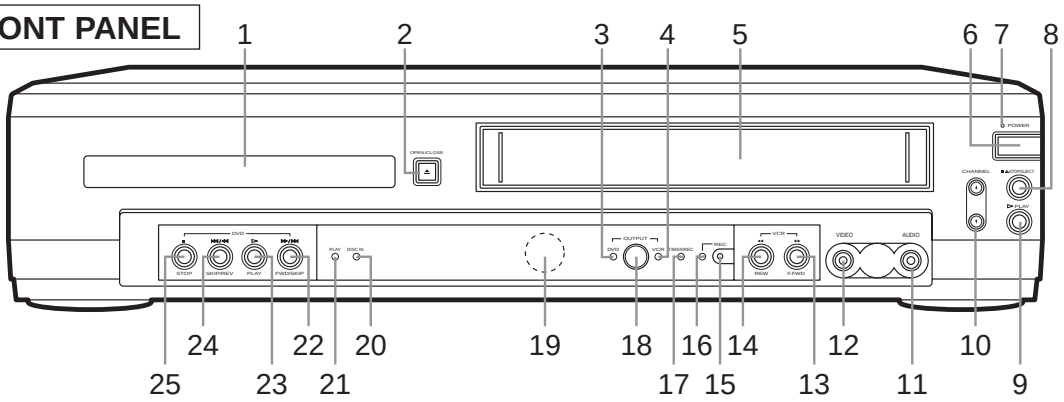


3. Close the cover.

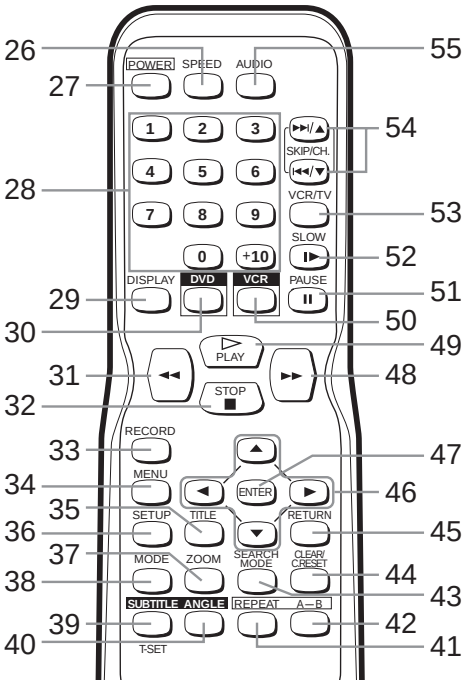
Notes
- Do not mix alkaline and manganese batteries.
- Do not mix old and new batteries.

[EWD2003]

FRONT PANEL



REMOTE CONTROL



1. **Disc loading tray**
2. **OPEN/CLOSE Button**
   Press to insert discs into or remove them from the tray.
3. **DVD OUTPUT Light (Green)**
   This light appears when the DVD output mode is selected. You can only watch DVDs when the green DVD OUTPUT light is on. To make the green DVD OUTPUT light come on, press DVD on the remote control or OUTPUT on the front panel.
4. **VCR OUTPUT Light (Green)**
   This light appears when the VCR output mode is selected. You can only watch tapes when the green VCR OUTPUT light is on. To make the green VCR OUTPUT light come on, VCR on the remote control or OUTPUT on the front panel.
5. **Cassette compartment**
6. **POWER Button**
   Press to turn the power on and off.
7. **POWER Light**
   This light appears when the power is on.
8. **STOP/EJECT Button (VCR)**
   EJECT
   Press to remove the tape from the VCR.
   STOP
   Press to stop the tape motion.
9. **PLAY Button(VCR)**
   Press to begin playback.
10. **CHANNEL (▲/▼) Buttons**
    In VCR mode, press to change TV channels on the VCR; press to adjust the tracking during normal or slow motion playback; press to remove vertical jitter in a Still picture.
11. **AUDIO In Jack**
    Connect audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.
12. **VIDEO In Jack**
    Connect a video cable coming from the video out jack of a camcorder, another VCR, or a video source (laser disc player, camcorder, etc.) here.
13. **F.FWD Button (VCR)**
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback. (Forward Search).
14. **REW Button (VCR)**
    Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
15. **REC/OTR Button**
    Press once to start a recording. Press repeatedly to start a One-Touch Recording.
16. **REC Light**
    Lights up during recording.
17. **TIMER REC Light**
    This light appears when the DVD/VCR is in standby mode for a timer recording or during a One-Touch Recording. It flashes if T-SET is pressed for a timer recording, but there is no tape in the DVD/VCR. It flashes when all timer recordings or One-Touch Recordings are finished.
18. **OUTPUT Button**
    Press to select DVD mode or VCR mode.
    - You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

19. **Remote Sensor Window**
20. **DISC IN Light (green)**
    Light appears when a disc is in the DVD Player.
21. **PLAY Light (green)**
    Light appears during Disc playback.
22. **FWD/SKIP Button (DVD)**
    Press this button during playback to fast forward the Disc.
    Press this button in PAUSE mode to slow forward the Disc.
    Press to skip Chapters or Tracks.
23. **PLAY Button (DVD)**
    Press to begin playback.
24. **SKIP/REV Button (DVD)**
    Press this button during playback to fast reverse the Disc.
    Press this button in PAUSE mode to slow reverse the Disc.
    Press to skip Chapters or Tracks.
25. **STOP Button (DVD)**
    Stops operation of the disc.
26. **SPEED Button**
    Press to select the VCR's recording speed (SP or SLP)
27. **POWER Button**
    Press to turn the power on and off.
28. **Number Buttons**
    - **DVD mode**
      Press to select numbered items in a menu.
      +10
      Use this button to enter number 10 and above.
    - **VCR mode**
      Press to select TV channels on the VCR.
      To select channels, enter channel numbers as a two-digit number for the quickest results. For example, to select channel 6, press 0 then 6.
29. **DISPLAY Button**
    - **DVD mode**
      Press to access or remove the display screen during DVD or Audio CD playback.
    - **VCR mode**
      Press to access or remove the VCR's on-screen status display.
30. **DVD Button**
    Press to select DVD mode for the remote control.
    - You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**
31. **◄◄ Button**
    - **DVD mode**
      Press to view the DVD picture in fast reverse motion. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the reverse speed of slow motion.
    - **VCR mode**
      Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
32. **STOP Button**
    - **DVD mode**
      Press to stop the disc motion.
    - **VCR mode**
      Press to stop the tape motion.
33. **RECORD Button**
    Press once to start a recording.
34. **MENU Button**
    - **DVD mode**
      Press to display the menu of the Disc.
    - **VCR mode**
      Press to access the VCR menu.
35. **TITLE Button**
36. **SETUP Button**
    Press to enter DVD player setup mode.
37. **ZOOM Button**
    Enlarges part of a DVD-reproduced image.
38. **MODE Button**
    Activates program playback or random playback mode when playing CDs or MP3. Sets Black level and virtual surround.
39. **SUBTITLE Button**
    Press to select the desired subtitle language.
    T-SET Button
    Press to put the VCR into standby mode for a timer recording.
40. **ANGLE Button**
    Press to change the camera angle to see the sequence being played back from a different angle.
41. **REPEAT Button**
    Repeats playback of the current disc, title, chapter or track.
42. **A-B REPEAT Button**
    Repeats playback of a selected section.
43. **SEARCH MODE Button**
    - **DVD mode**
      Press to access or remove the Search display, which allows you to go directly to a specific Title/Chapter/Track/Time.
    - **VCR mode**
      Press to perform a Time Search or an Index Search.
44. **CLEAR/C.RESET Button**
    - **DVD mode**
      Press to reset the setting.
    - **VCR mode**
      Press to reset the counter. Press to exit from the MENU screen.
45. **RETURN Button**
    - **DVD mode**
      Returns to the previous operation in the DVD setup mode.
46. **Arrow Buttons**
    Use when making settings while watching the display on a TV screen.
    - **VCR mode**
      ▼/▲Buttons
      Press to enter digits when setting program (For example: setting clock or timer program). Press to select the setting modes from the on screen menu.
      ►Button
      When setting program (For example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input. Press to determine the setting modes from the on screen menu. Press to add or delete channel numbers during channel preset.
      ◄Button
      Press to cancel a setting of timer program. Press to correct digits when setting program (For example: setting clock or timer program). Press to add or delete channel numbers during channel preset.
47. **ENTER Button**
    - **DVD mode**
      Press to accept a setting.

48. ►► Button

● **DVD mode**

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

● **VCR mode**

Press to rapidly advance the tape, or view the picture rapidly in forward during playback (Forward Search).

49. PLAY Button

● **DVD mode**

Press to begin playback.

● **VCR mode**

Press to begin playback.

50. VCR Button

Press to select VCR mode for the remote control.

● You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

51. PAUSE Button

● **DVD mode**

Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step (or one frame at a time).

● **VCR mode**

While recording, press to temporarily stop the recording (pause). Press a second time to resume normal recording. You can not pause a One-Touch Recording. Or, press during tape playback to freeze the picture. Press to advance the picture one frame at a time during still mode.

52. SLOW Button

During tape playback, press to view the video tape in slow motion. To return to playback, press PLAY.

53. VCR/TV Button

Use to select VCR or TV position.

● **VCR Position**

To view playback, to monitor video recordings or to watch TV using the VCR tuner.

● **TV Position**

To watch TV or to view one program while recording another.

54. SKIP/CH. Buttons

● **DVD mode**

Press to skip Chapters or Tracks.

● **VCR mode**

Press to change TV channels on the VCR.

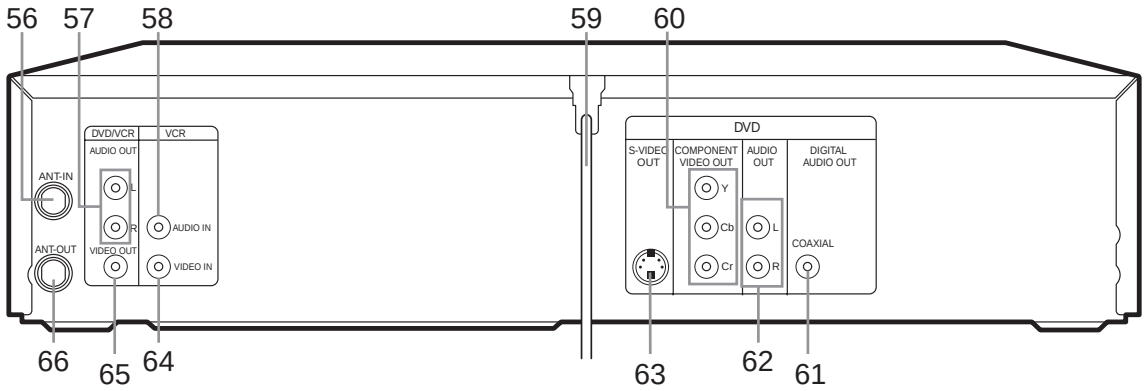
55. AUDIO Button

Press to select a desired audio language or sound mode.

Notes

- To use the remote control to operate the DVD/VCR COMBINATION UNIT and its features, press DVD on the remote control before pressing other DVD's operation buttons. Verify that the green DVD OUTPUT Light is on.
- To use the remote control to operate the VCR and its features, press VCR on the remote control before pressing other VCR's operation buttons. Verify that the green VCR OUTPUT Light is on.

REAR VIEW



56. ANT-IN (Antenna In) Jack

Connect your antenna, Cable Box, or Satellite decoder box.

57. DVD/VCR AUDIO OUT Jacks

Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment.

58. AUDIO IN Jack

Connect audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.

59. AC Power Cord

Connect to a standard AC outlet to supply power to the DVD/VCR COMBINATION UNIT.

DVD Playback only

60. COMPONENT VIDEO OUT Jacks

Connect optional component video cables here and to the component Video In jacks of a television.

61. COAXIAL Jack

Connect an optional coaxial digital audio cable here and to the Coaxial Digital Audio In jack of a decoder or audio receiver.

62. DVD ANALOG AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment (DVD only).

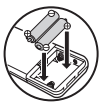
63. S-VIDEO OUT Jack
Connect an optional S-Video cable here and to the S-Video In jack of a television. (DVD only)

64. VIDEO IN Jack
Connect a cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

LOADING THE BATTERIES

1. Open the battery compartment cover.

2. Insert two AA batteries, with each one oriented correctly.



3. Close the cover.

Notes
- Do not mix alkaline and manganese batteries.
- Do not mix old and new batteries.

65. DVD/VCR VIDEO OUT Jack
Connect the yellow video cable (supplied) here and to the TV's Video In jack.

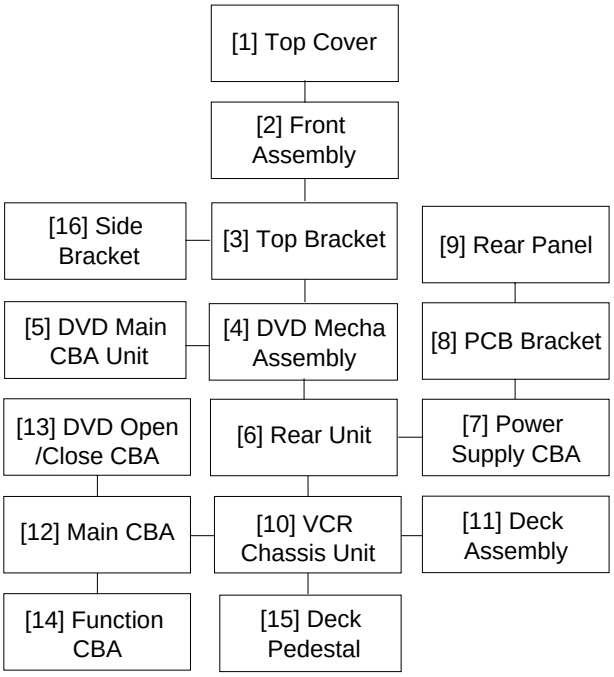
66. ANT-OUT (Antenna Out) Jack
Use the supplied RF coaxial cable to connect this jack to the ANTENNA IN Jack on your TV.

Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	D1	7(S-1)	-
[2]	Front Assembly	D2	(S-3), *7(L-1)	1 1-1 1-2
[3]	Top Bracket	D2	4(S-2)	-
[4]	DVD Mecha Assembly	D3	3(S-4), *CN401, *CN601,*CN302	-
[5]	DVD Main CBA Unit	D4	2(S-5), *CN201, *CN301	2 2-1 2-2 2-3 3
[6]	Rear Unit	D5	5(S-6), 3(S-7), (S-7A) CN1005	-
[7]	Power Supply CBA	D6	4(S-8)	-
[8]	PCB Bracket	D6	3(S-9)	-
[9]	Rear Panel	D6	----------	-
[10]	VCR Chassis Unit	D7	5(S-10), 4(S-11)	-
[11]	Deck Assembly	D8	Desolder, 2(S-12)	4,5
[12]	Main CBA	D8	----------	-
[13]	DVD Open/ Close CBA	D8	Desolder	-
[14]	Function CBA	D8	Desolder	-
[15]	Deck Pedestal	D9	7(S-13)	-
[16]	Side Bracket	D9	(S-14)	-
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw, CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) are fragile. Be careful not to break them.

1-1. Remove Screw (S-3).

1-2. Release seven Locking Tabs (L-1) (to do this, first release five Locking Tabs (A) at the side and top, and then release two Locking Tabs (B) at the bottom.)

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup follow next procedures.

2-1. Slide the pickup unit as shown in Fig. D4.

2-2. Short the three short lands of FPC cable with solder before removing the FFC cable (CN301) from it. If you disconnect the FFC cable (CN301), the laser diode of pickup will be destroyed. (Fig. D4)

2-3. Disconnect Connector (CN201). Remove two Screws (S-5) and lift the DVD Main CBA Unit. (Fig. D4)

CAUTION 3: When reassembling, confirm the FFC cable (CN301) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. D4)

4. When reassembling, solder wire jumpers as shown in Fig. D8.

5. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

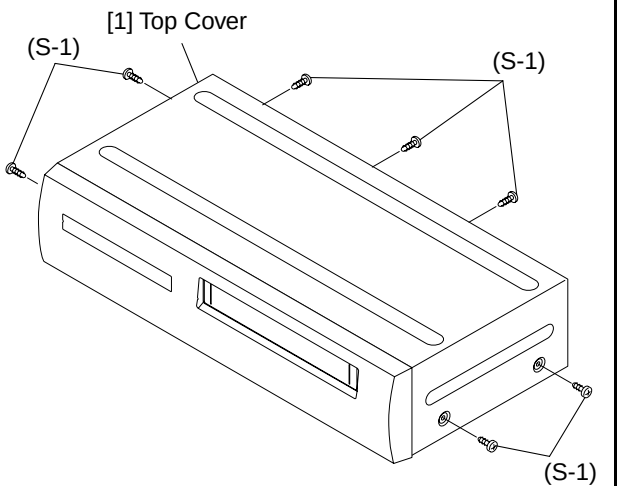


Fig. D1

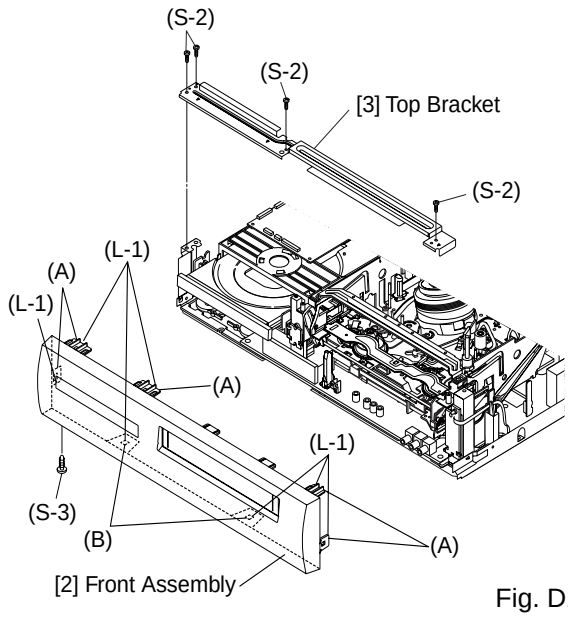


Fig. D2

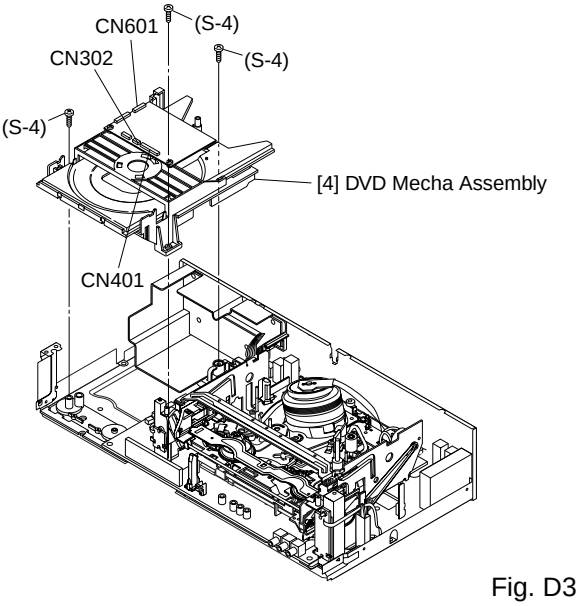
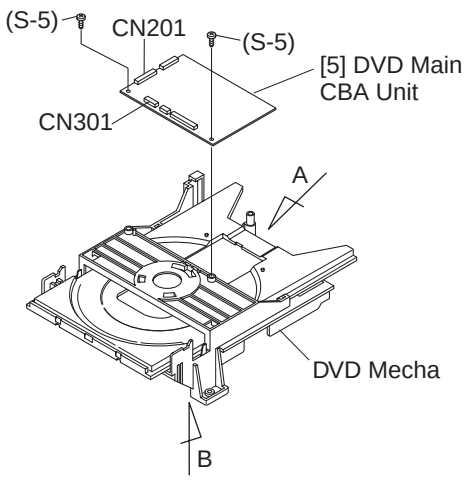
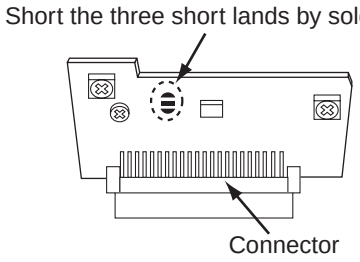


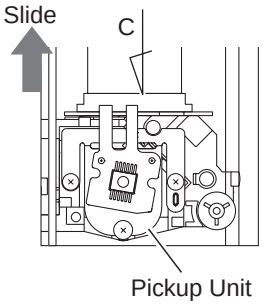
Fig. D3



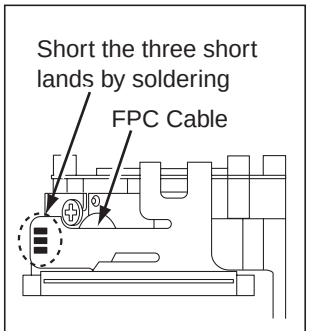


View for A

OR



View for B



View for C

Fig. D4

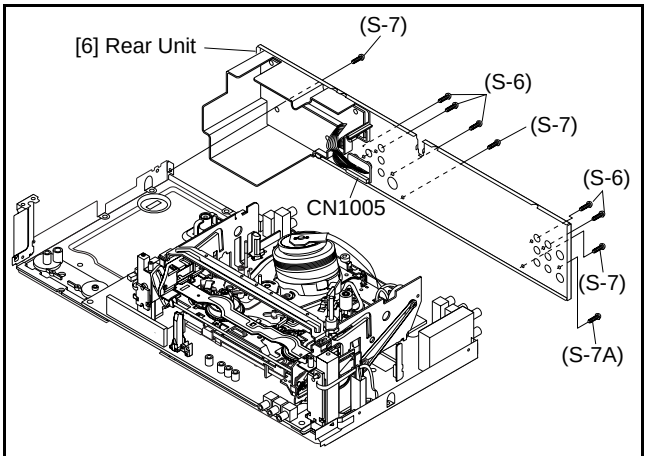


Fig. D5

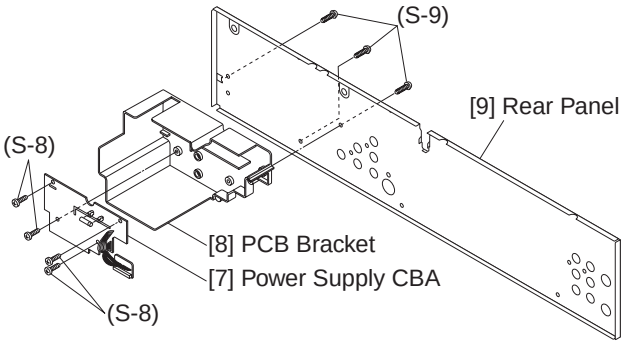


Fig. D6

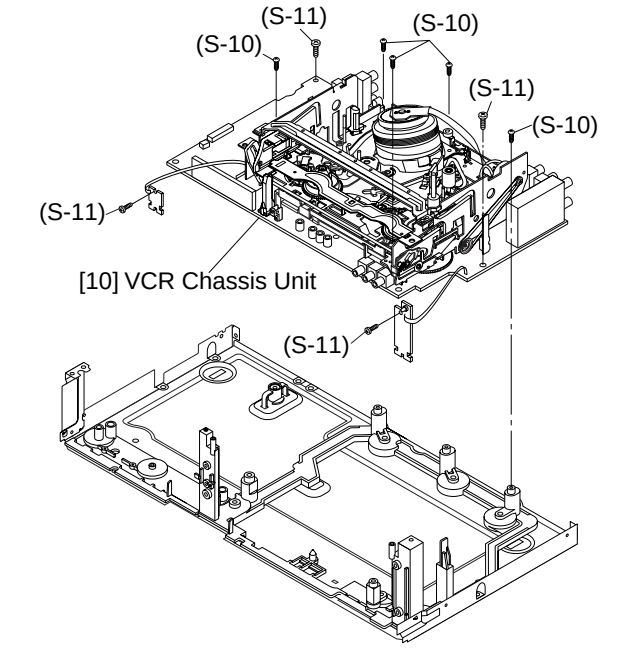
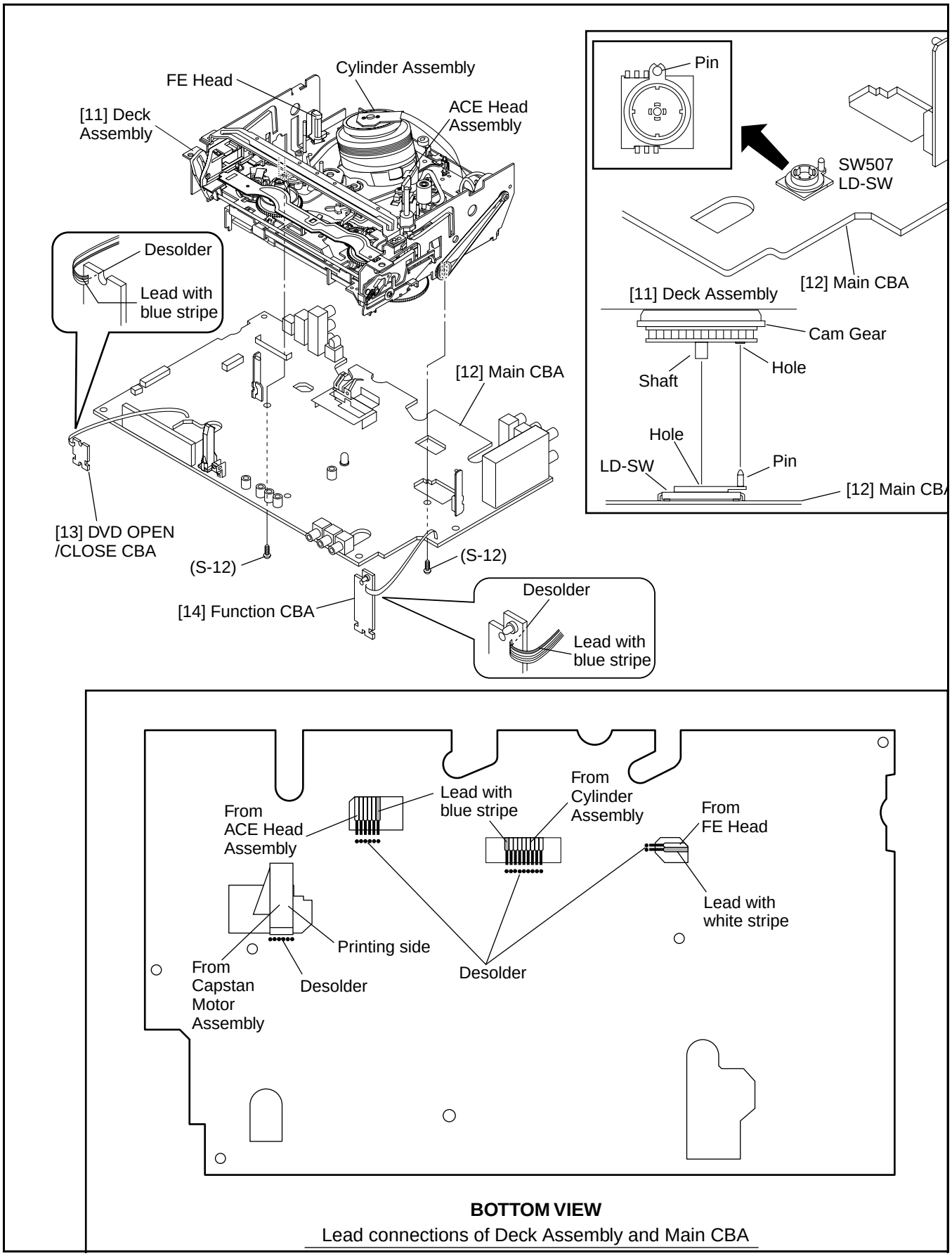


Fig. D7



BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

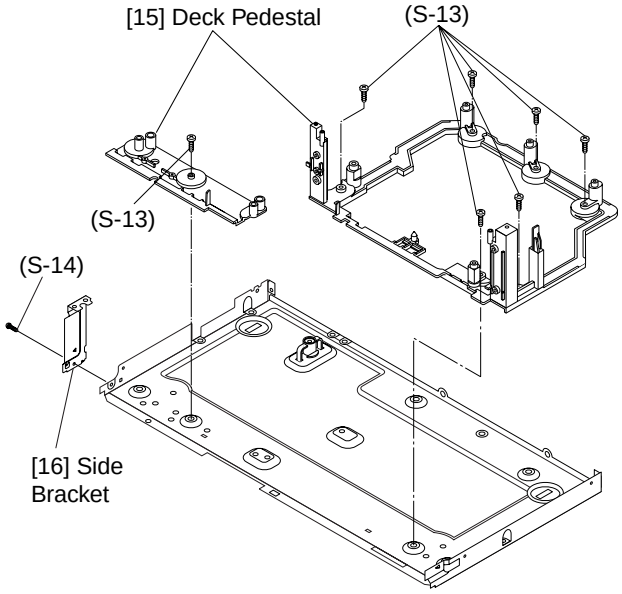
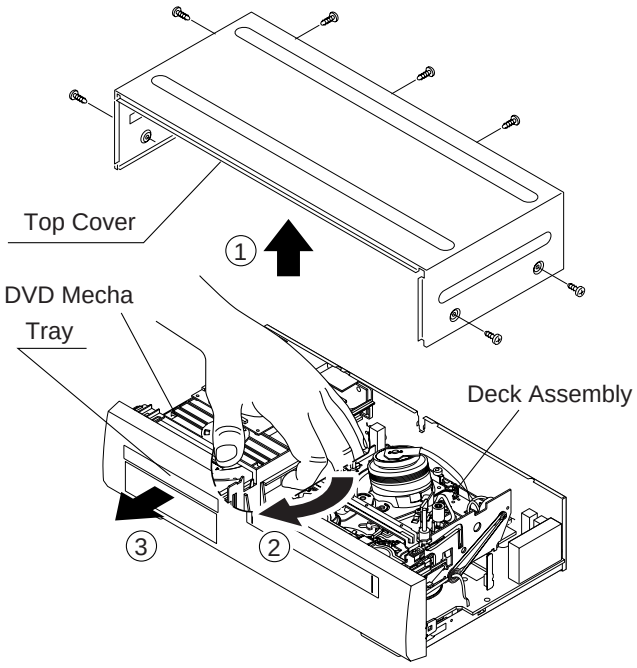
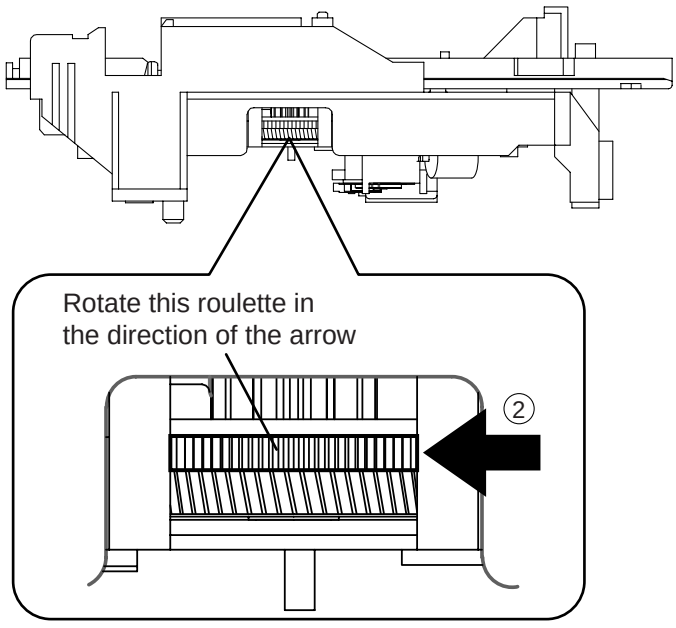


Fig. D9

HOW TO MANUAL EJECT

1. Remove the Top Case.
2. Rotate this roulette in the direction of the arrow as shown below.





ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching point during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point) (MAIN CBA)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H±1H (412.7μs±60μs)	

Connections of Measurement Equipment

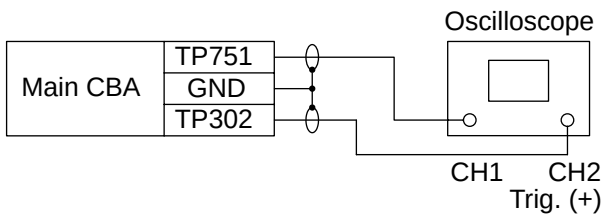
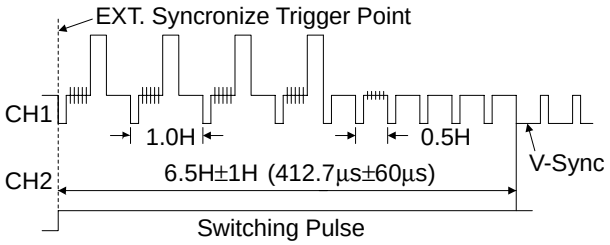


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H(412.7μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD player into version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order. The tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

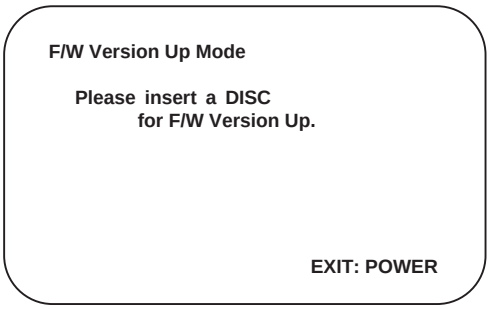


Fig. a Version Up Mode Screen

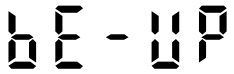


Fig. b VFD in Version Up Mode

   The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.
3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. c appears on the screen and Fig. d appears on the VFD.

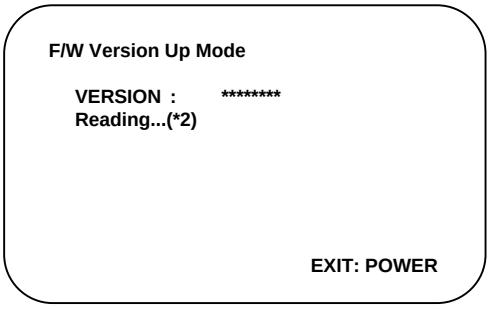


Fig. c Programming Mode Screen

Fig. d VFD in Programming Mode (Example)

   The appearance shown in (*2) of Fig. c is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*3) of Fig. e appears on the VFD. (Fig. f)

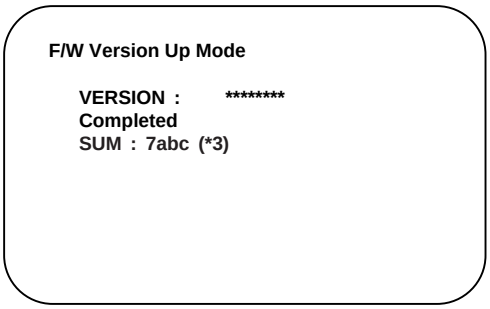


Fig. e Completed Program Mode Screen

Fig. f VFD upon Finishing the Programming Mode (Example)

   At this time, no buttons are available.
6. Unplug the AC cord from the AC outlet. Then plug it again.
7. Turn the power on by pressing the power button and the tray will close.
8. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

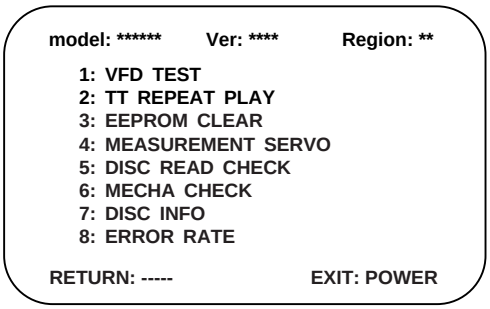


Fig. g

9. Press [3] button on the remote control unit.
   Fig. h appears on the screen.

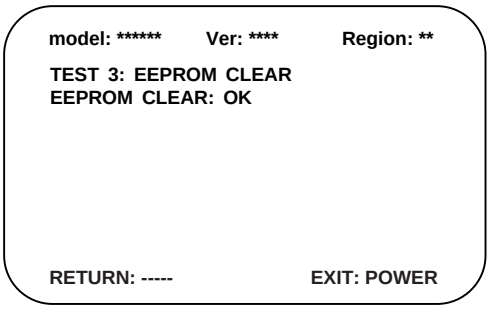
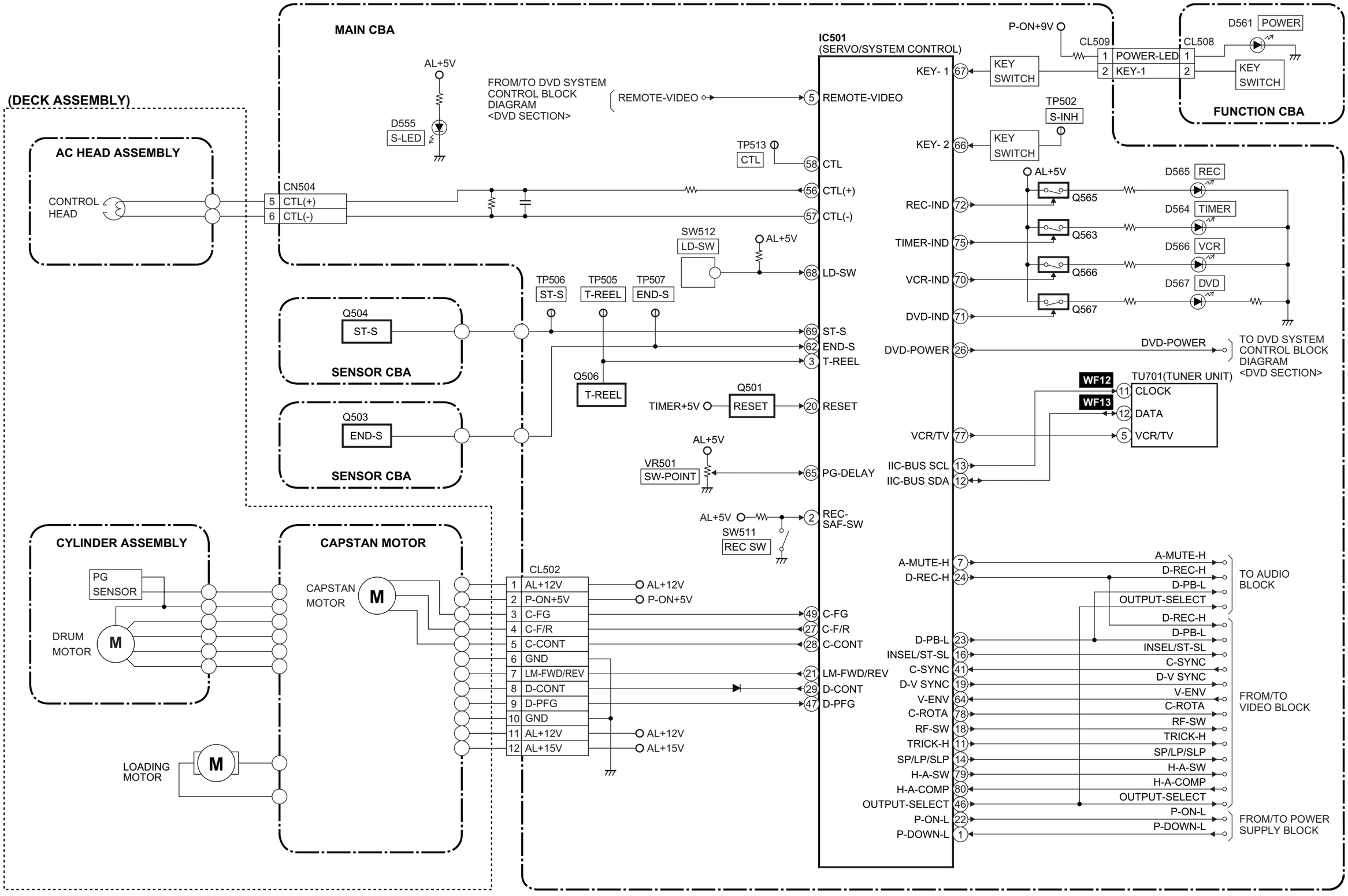


Fig. h

10. To finish this mode, press [POWER] button.

BLOCK DIAGRAMS <VCR SECTION>

Servo/System Control Block Diagram



Video Block Diagram

REC VIDEO SIGNAL | PB VIDEO SIGNAL | DVD VIDEO SIGNAL | MODE: SP/REC

MAIN CBA

TP751 V-OUT WF1
JK751 V-OUT
Q391 BUFFER
IC751 (OUTPUT SELECT)
VCR
DVD
SW CTL
IC501 (OSD)
OSD CHARACTER MIX
FROM SERVO/SYSTEM CONTROL BLOCK DIAGRAM
OUTPUT SELECT
Q760
TU701
WF11
VIDEO IN
VIDEO OUT
WF15
IC301 (Y/C PROCESS)
TUNER
6dB AMP
CCD 1H DELAY
Q301 BUFFER
JK752 REAR V-IN
FROM DVD VIDEO/AUDIO BLOCK DIAGRAM <DVD SECTION>
DVD-VIDEO
REAR
V-AGC
FBC
Y/C MIX
DOC YNR Y/C COMB
LUMINANCE SIGNAL PROCESS
JK753 FRONT V-IN
FRONT
INSEL/ST-SL
D-PB-L
REC/EE/PB
D-REC-H
TRICK-H
C-SYNC
C-ROTA
D-V SYNC
SP/LP/SLP
FROM/TO SERVO/SYSTEM CONTROL BLOCK DIAGRAM
SYNC SEPA
CHROMINANCE SIGNAL PROCESS
AGC AMP
(DECK ASSEMBLY)
VIDEO (R)-1 HEAD
VIDEO (L)-1 HEAD
VIDEO (L)-2 HEAD
VIDEO (R)-2 HEAD
CYLINDER ASSEMBLY
CL253
V(R)-1
V-COM
V(L)-1
V(L)-2
V-COM
V(R)-2
TP302
WF2
RF-SW
FROM/TO SERVO/SYSTEM CONTROL BLOCK DIAGRAM
RF-SW
V-ENV
H-A-SW
H-A-COMP
H-A-COMP
SP
LP/EP
HPF
ENV DET
TP301
C-PB
WF3

Audio Block Diagram

PB-AUDIO SIGNAL REC-AUDIO SIGNAL DVD AUDIO SIGNAL Mode : SP/REC

MAIN CBA

TU701
AUDIO-OUT 14 WF14
MOD-A 2 WF10
Q763 BUFFER
Q762 BUFFER
DVD-A(R)
DVD-A(L)
FROM DVD VIDEO/AUDIO BLOCK DIAGRAM <DVD SECTION>

REAR
JK751
A-OUT (R)
A-OUT (L)
JK756
A-OUT (R)
A-OUT (L)

TP753 A-OUT (R)
TP754 A-OUT (L)
IC751 (OUTPUT SELECT)
4 DVD 5 VCR 3
14 DVD 12 VCR 13
SW CTL 9 10 11
Q760
OUTPUT SELECT
FROM SERVO/SYSTEM CONTOL BLOCK DIAGRAM

FRONT
JK752 A-IN
JK755 A-IN

IC301 (AUDIO PROCESS)
80 76 78
TUNER
LINE 1
LINE 2
ALC
R P
LINE AMP
MUTE
96
4 EQ AMP 1 2 3 100
SP/LP-ON
AUTO BIAS 99 6 7
REC AMP
98
D-REC-H 11
REC/EE/PB 12 16
D-PB-L
A-MUTE-H
D-REC-H
FROM SERVO/SYSTEM CONTROL BLOCK DIAGRAM

(DECK ASSEMBLY)
AC HEAD ASSEMBLY
AUDIO HEAD
AUDIO ERASE HEAD
FE HEAD
FULL ERASE HEAD

CL504
4 A-PB/REC
3 A-COM
1 AE-H
2 AE-H/FE-H
CL501
1 FE-H
2 FE-H-GND

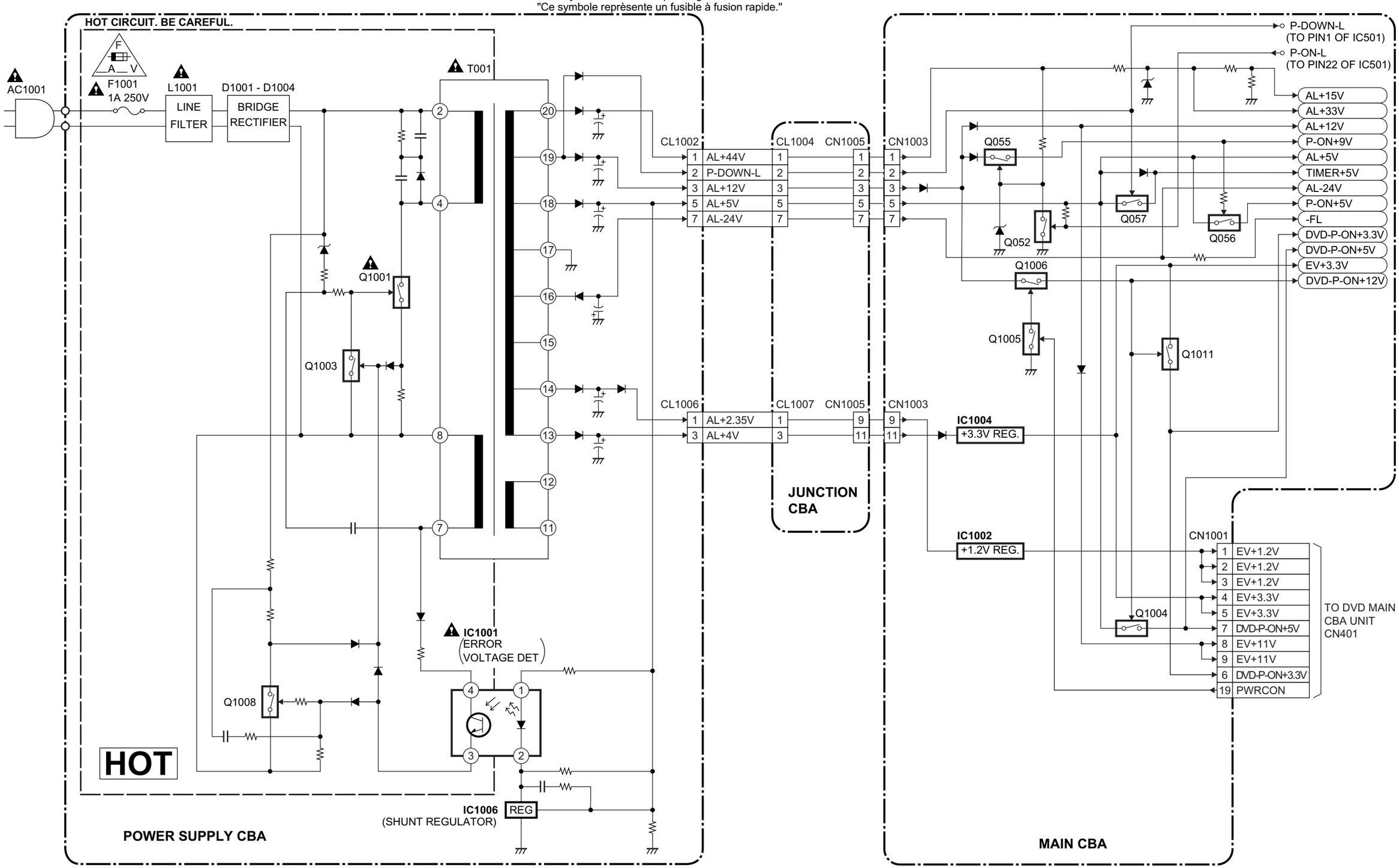
Q422 BIAS OSC
Q421
P-ON+5V
Q423 (PB=ON)
Q425 (SWITCHING D-REC OFF)
P-ON+5V
Q424 (PB=ON)

Power Supply Block Diagram

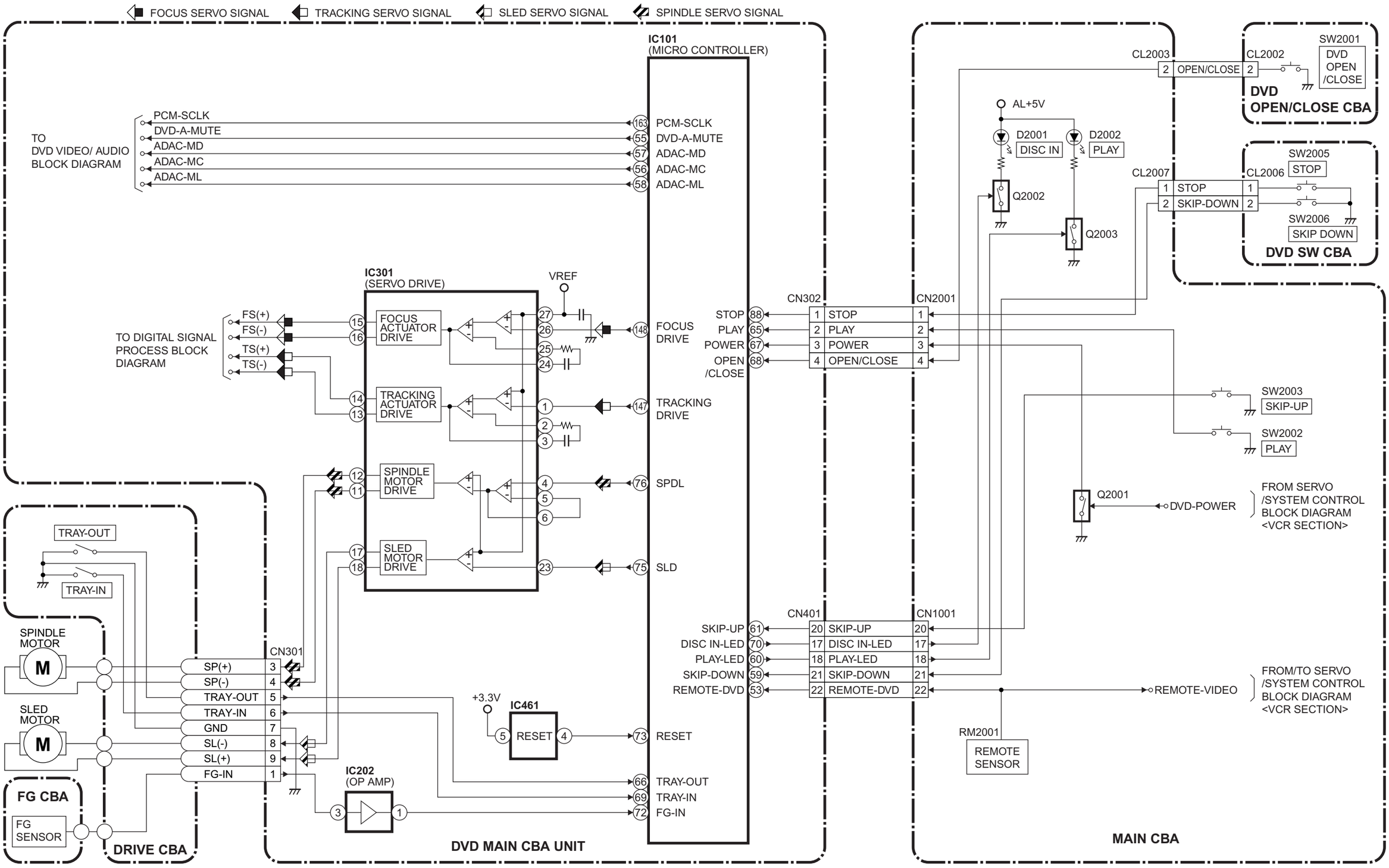
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE -REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

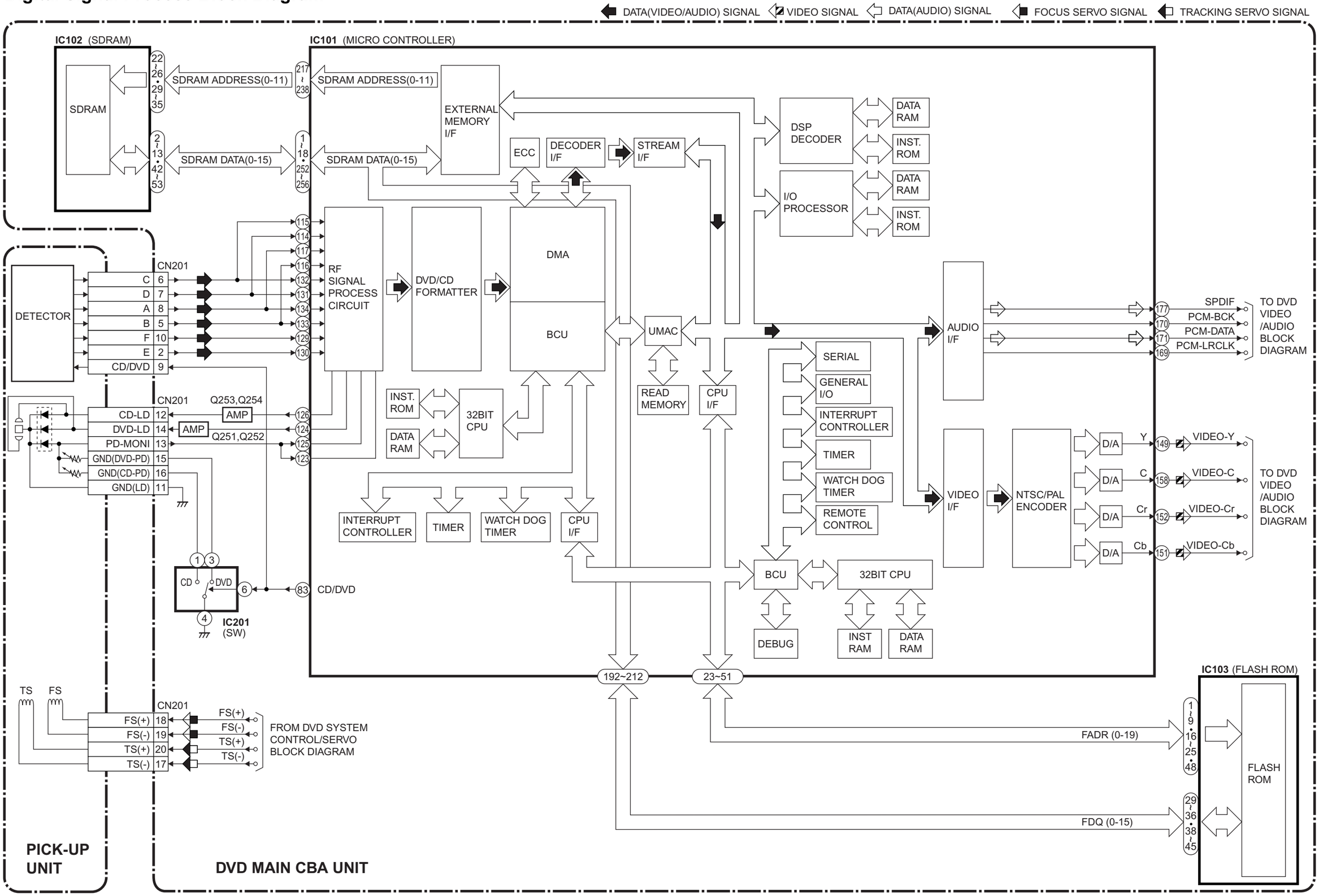
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



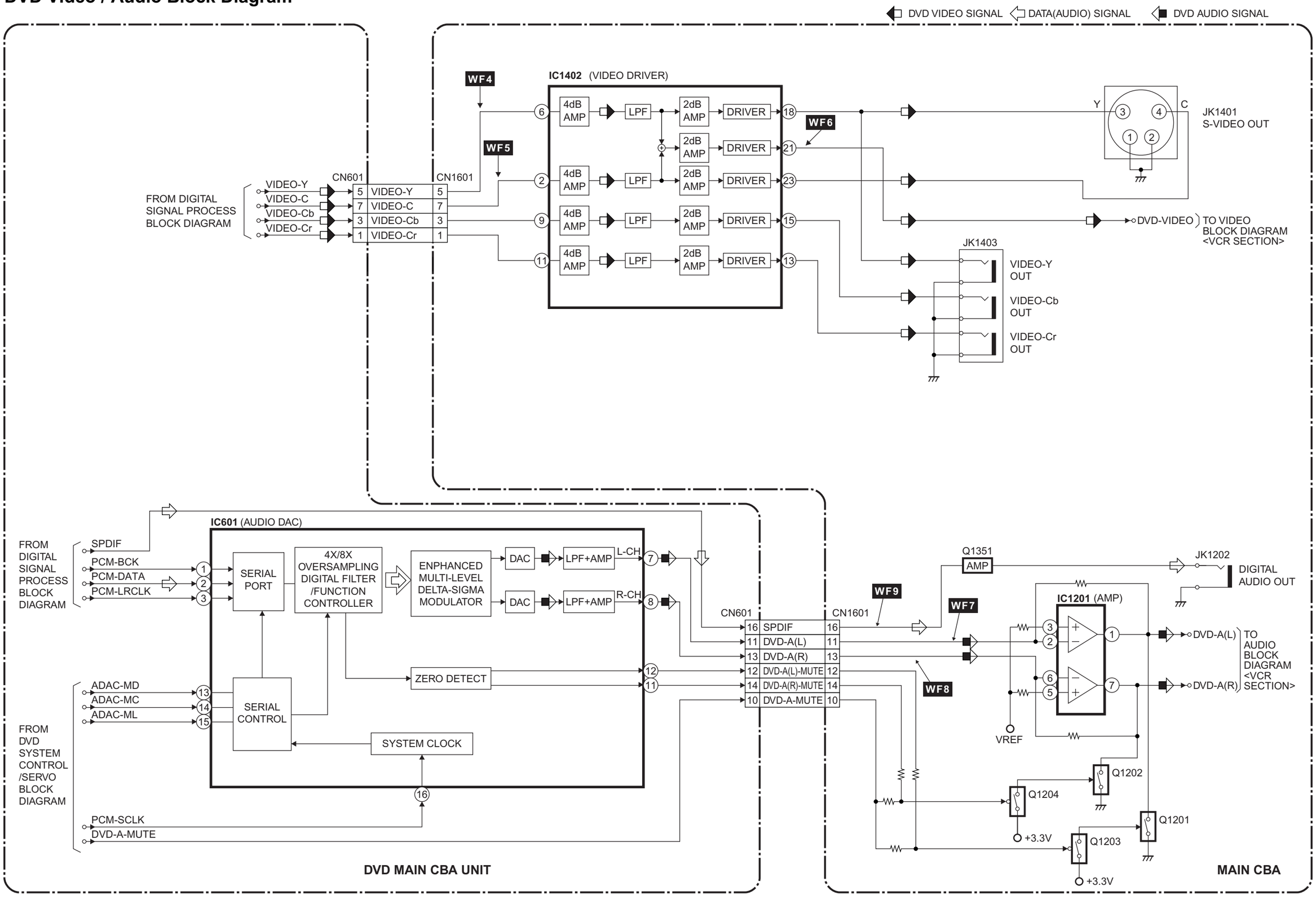
DVD System Control/Servo Block Diagram



Digital Signal Process Block Diagram



DVD Video / Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

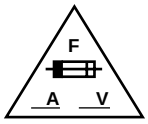
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

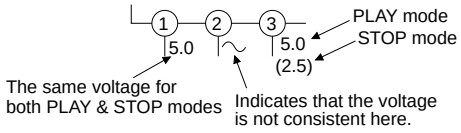
4. Wire Connectors

(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

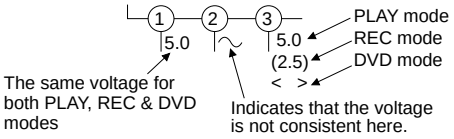
5. Mode: SP/REC

6. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >

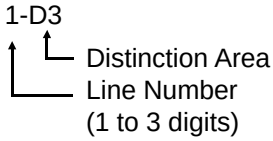


< VCR Section >



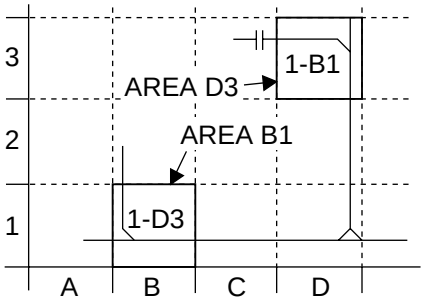
Unit: Volts

7. How to read converged lines



Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

 : Indicates a test point with a jumper wire across a hole in the PCB.

 : Used to indicate a test point with a component lead on foil side.

 : Used to indicate a test point with no test pin.

 : Used to indicate a test point with a test pin.

Main 1/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL

SYSCON/TIMER/SERVO BLOCK

MAIN 1/7

Ref No.	Position
IC	
IC501	C-3
TRANSISTORS	
Q501	D-1
Q506	A-3
CONNECTORS	
CL501	A-4
CL502	F-4
CL504	A-4
VARIABLE RESISTOR	
VR501	B-4
TEST POINTS	
TP505	B-3
TP513	B-4

MAIN CBA

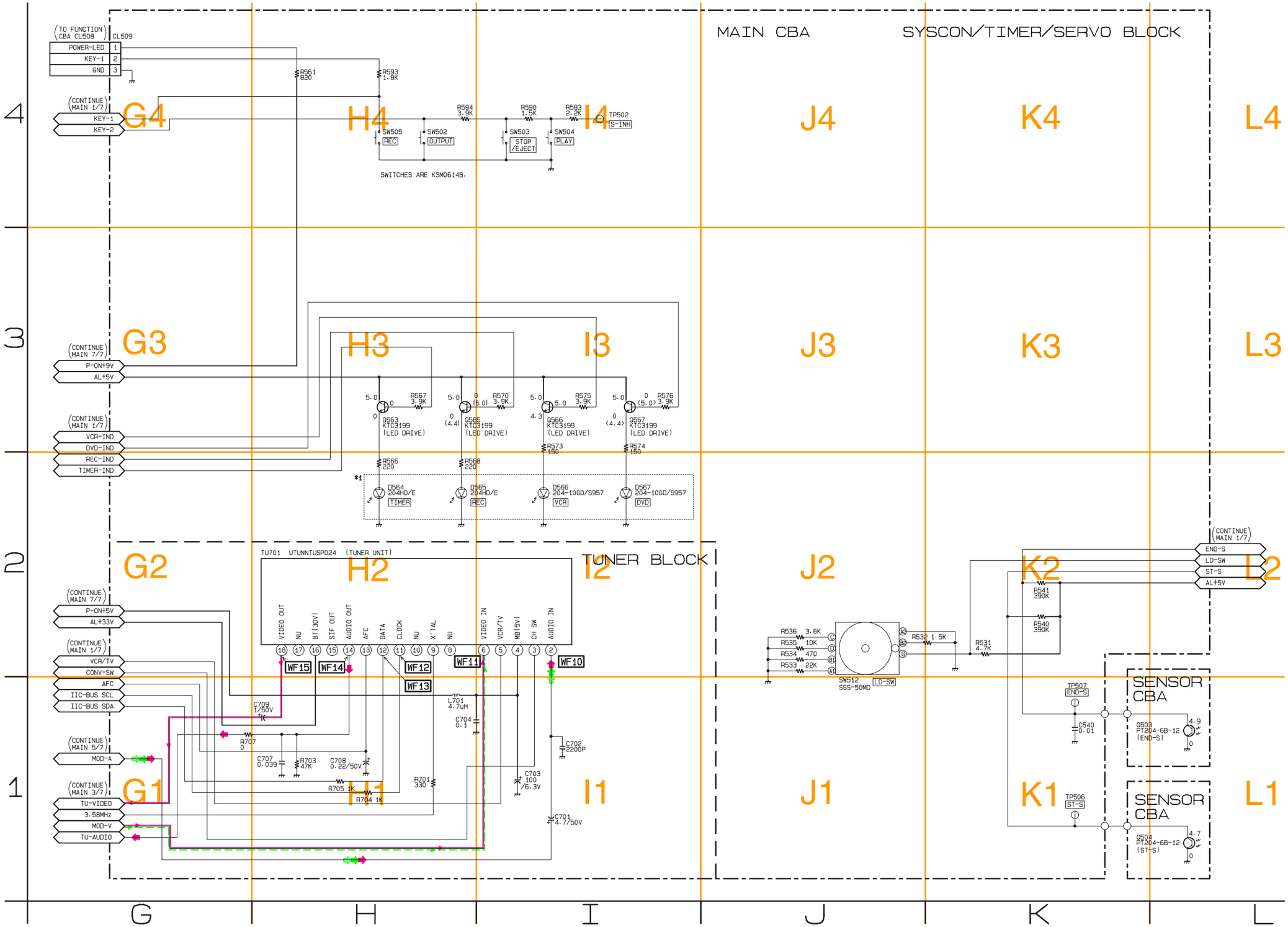
Main 2/7 Schematic Diagram < VCR Section >

*1 **Note:**
When it is necessary to replace one or more of the following Diodes, all four should be replaced: D564, D565, D566, D567.

REC VIDEO SIGNAL
REC AUDIO SIGNAL
DVD VIDEO + PB VIDEO SIGANL
PB AUDIO SIGNAL
DVD AUDIO SIGNAL

MAIN 2/7

Ref No.	Position
TRANSISTORS	
Q563	H-3
Q565	H-3
Q566	I-3
Q567	I-3
CONNECTOR	
CL509	G-4
TEST POINTS	
TP502	I-4
TP506	K-1
TP507	K-1

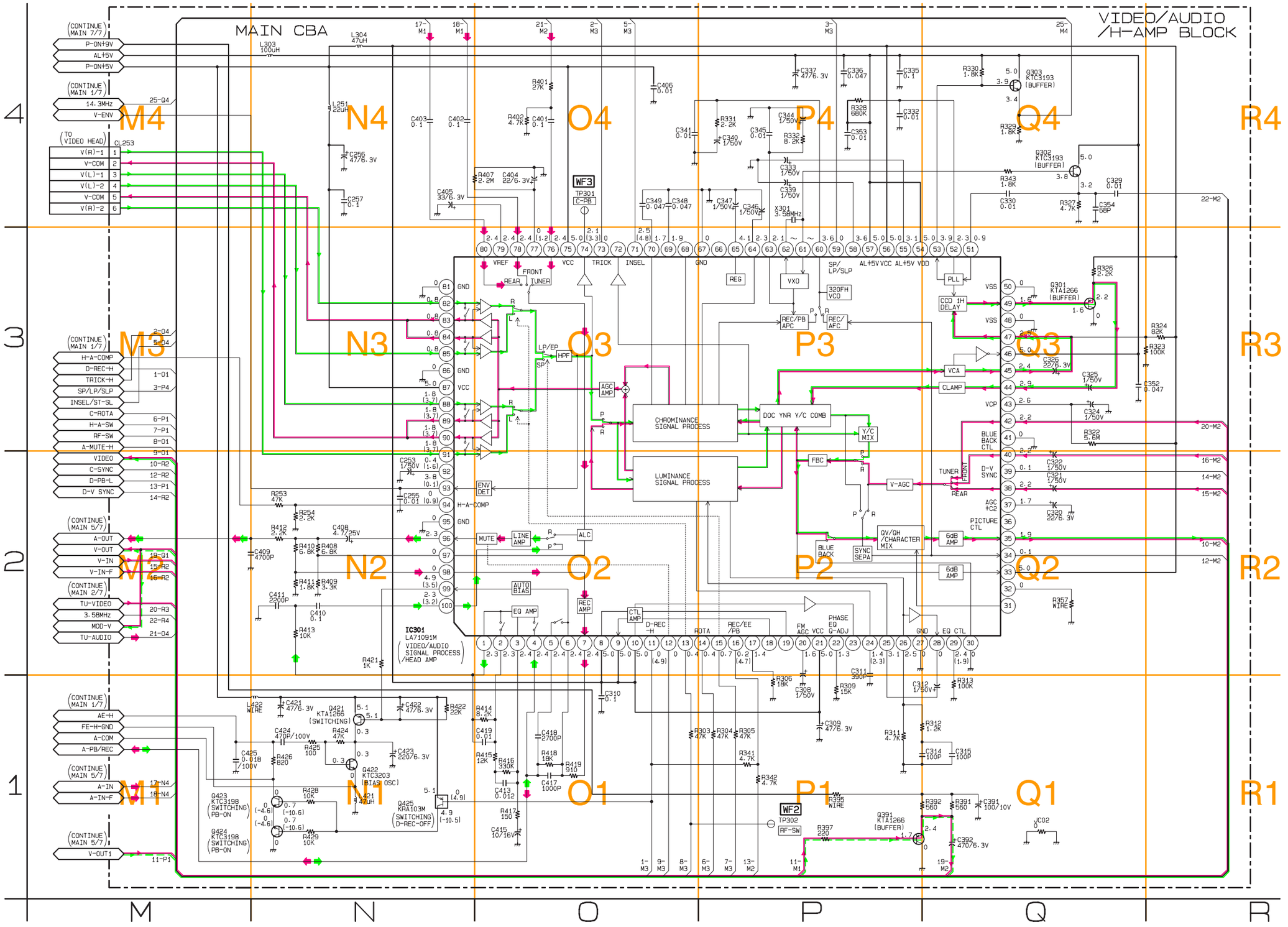


Main 3/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
DVD VIDEO + PB VIDEO SIGNAL
PB AUDIO SIGNAL

MAIN 3/7

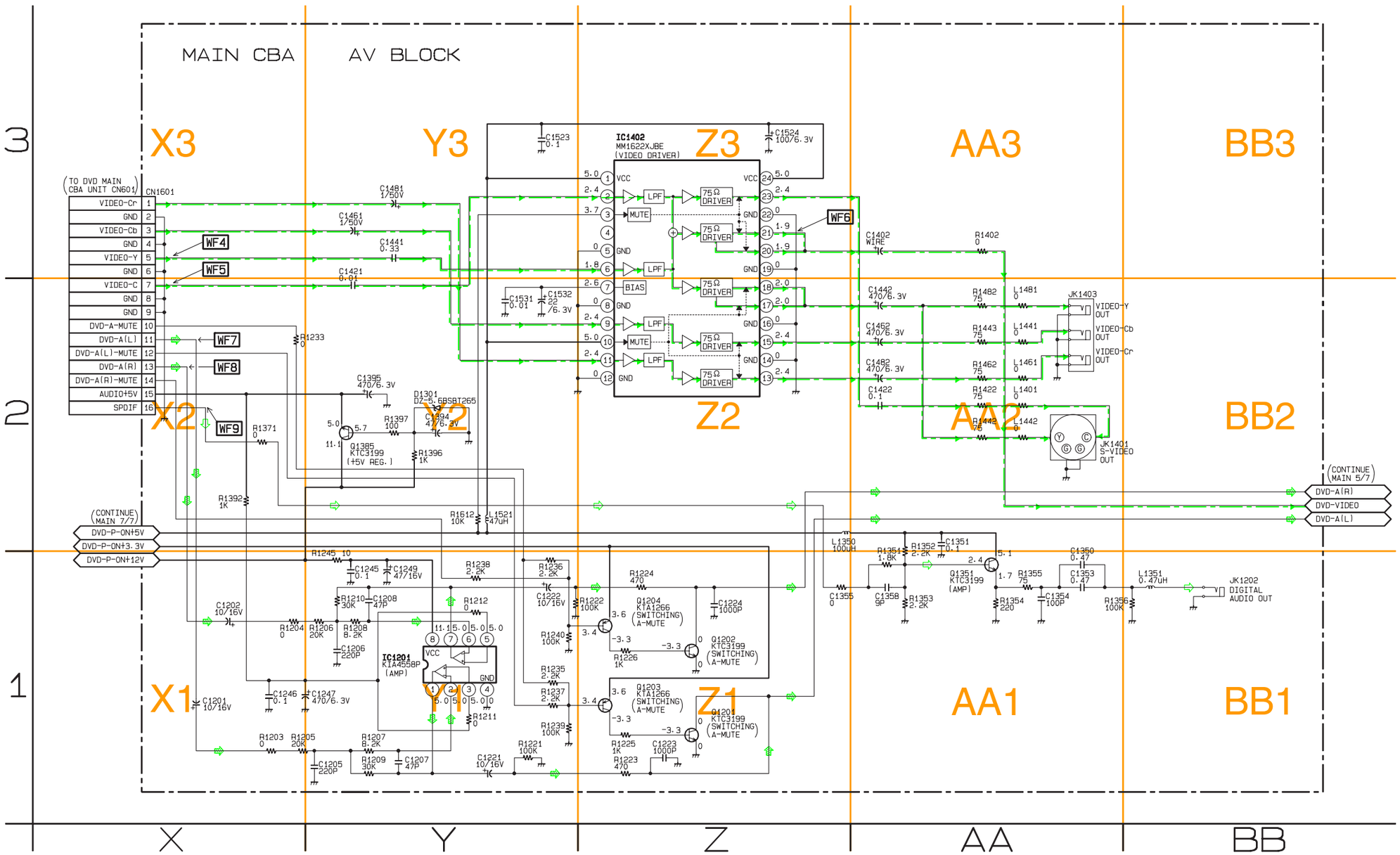
Ref No.	Position
IC	
IC301	N-2
TRANSISTORS	
Q301	Q-3
Q302	Q-4
Q303	Q-4
Q391	P-1
Q421	N-1
Q422	N-1
Q423	N-1
Q424	N-1
Q425	N-1
CONNECTOR	
CL253	M-4
TEST POINTS	
TP301	O-4
TP302	P-1



Main 4/7 Schematic Diagram < VCR Section >

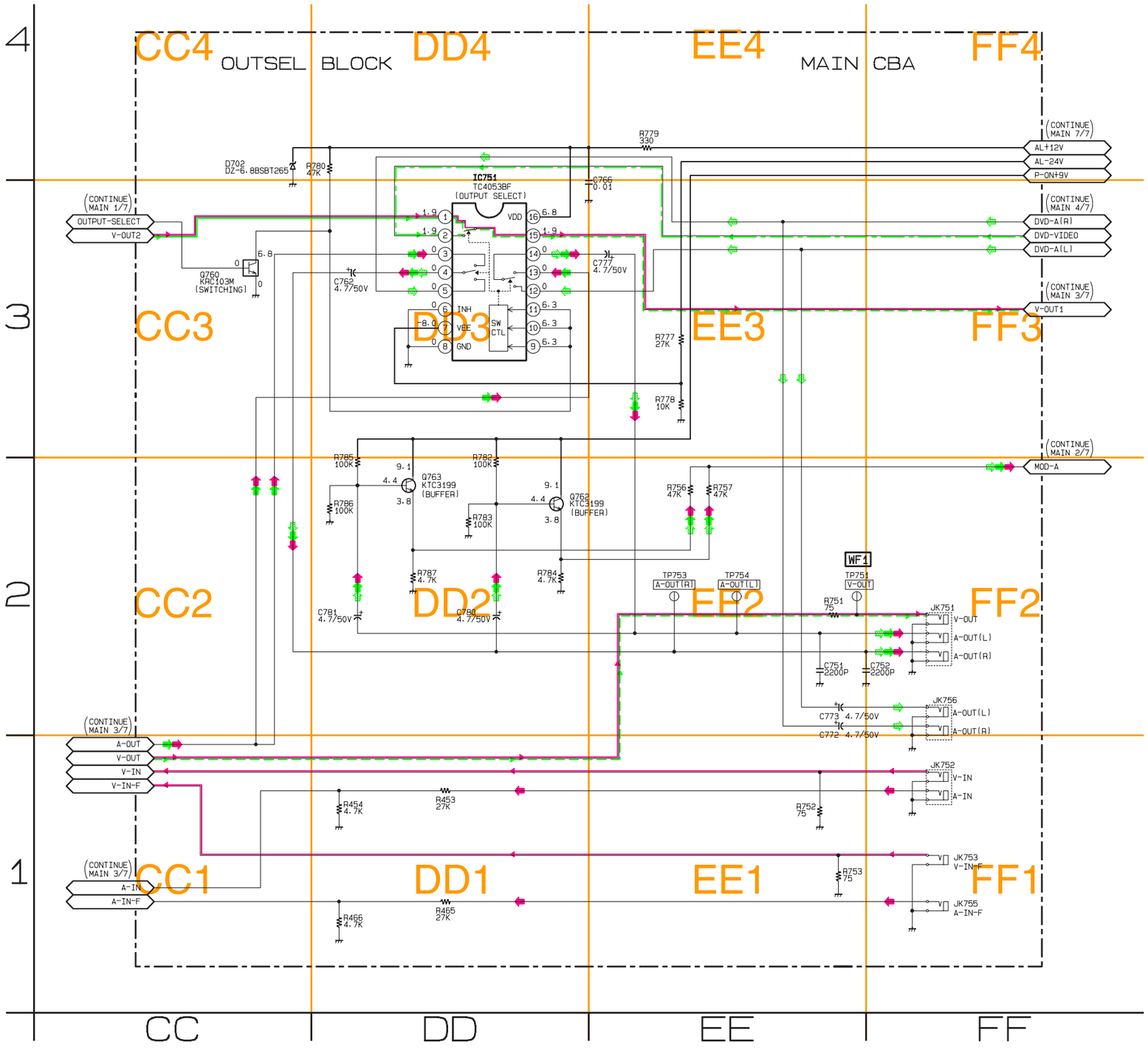
MAIN 4/7

Ref No.	Position
ICS	
IC1201	Y-1
IC1402	Z-3
TRANSISTORS	
Q1201	Z-1
Q1202	Z-1
Q1203	Z-1
Q1204	Z-1
Q1351	AA-1
Q1385	Y-2
CONNECTOR	
CN1601	X-3



Main 5/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
DVD VIDEO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL
DVD AUDIO SIGNAL



MAIN 5/7

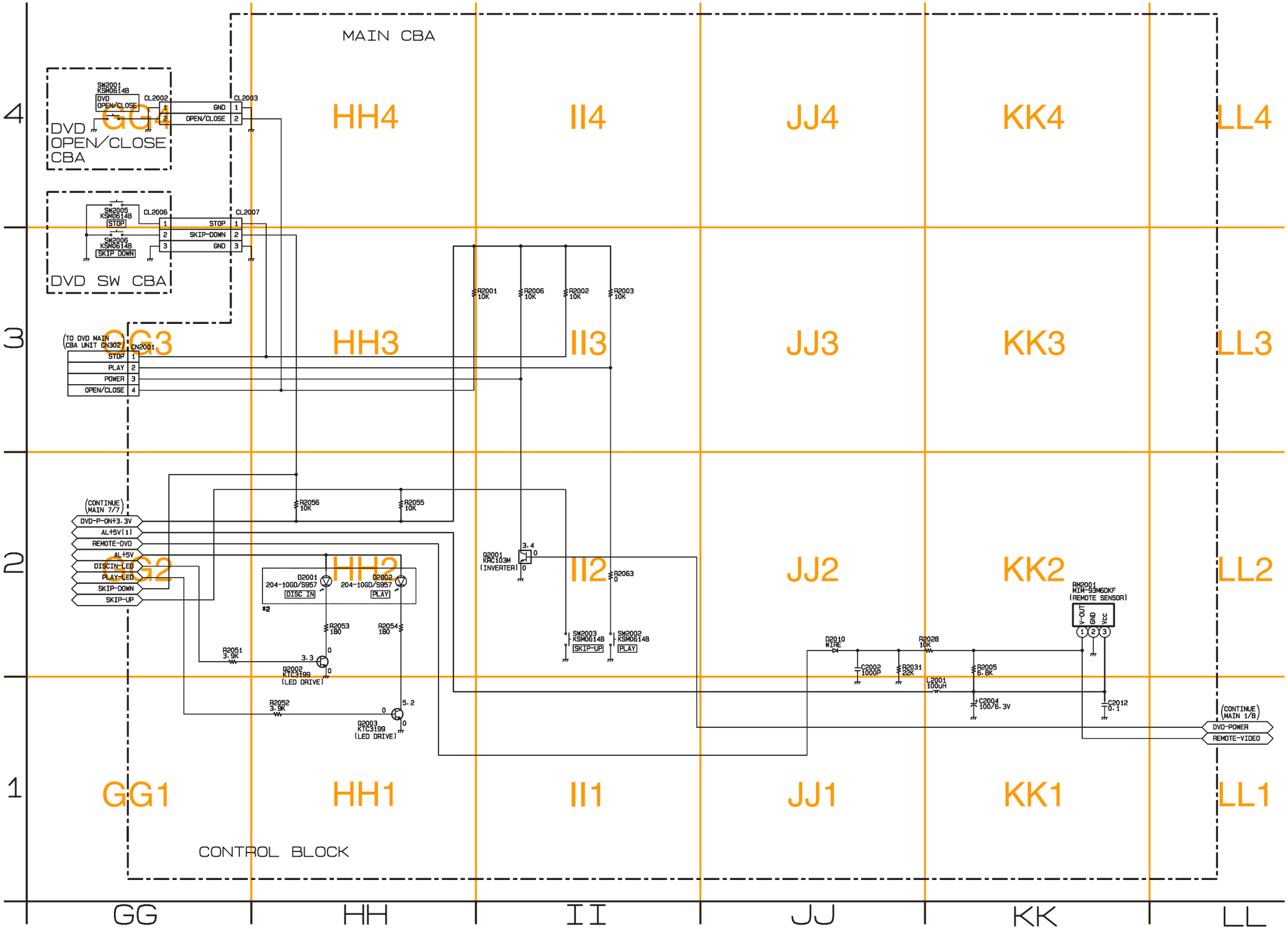
Ref No.	Position
IC	
IC751	DD-3
TRANSISTORS	
Q760	CC-3
Q762	DD-2
Q763	DD-2
TEST POINTS	
TP751	EE-2
TP753	EE-2
TP754	EE-2

Main 6/7 Schematic Diagram < VCR Section >

★2 Note:
When it is necessary to replace one or more of the following Diodes, all two should be replaced: D2001, D2002.

MAIN 6/7

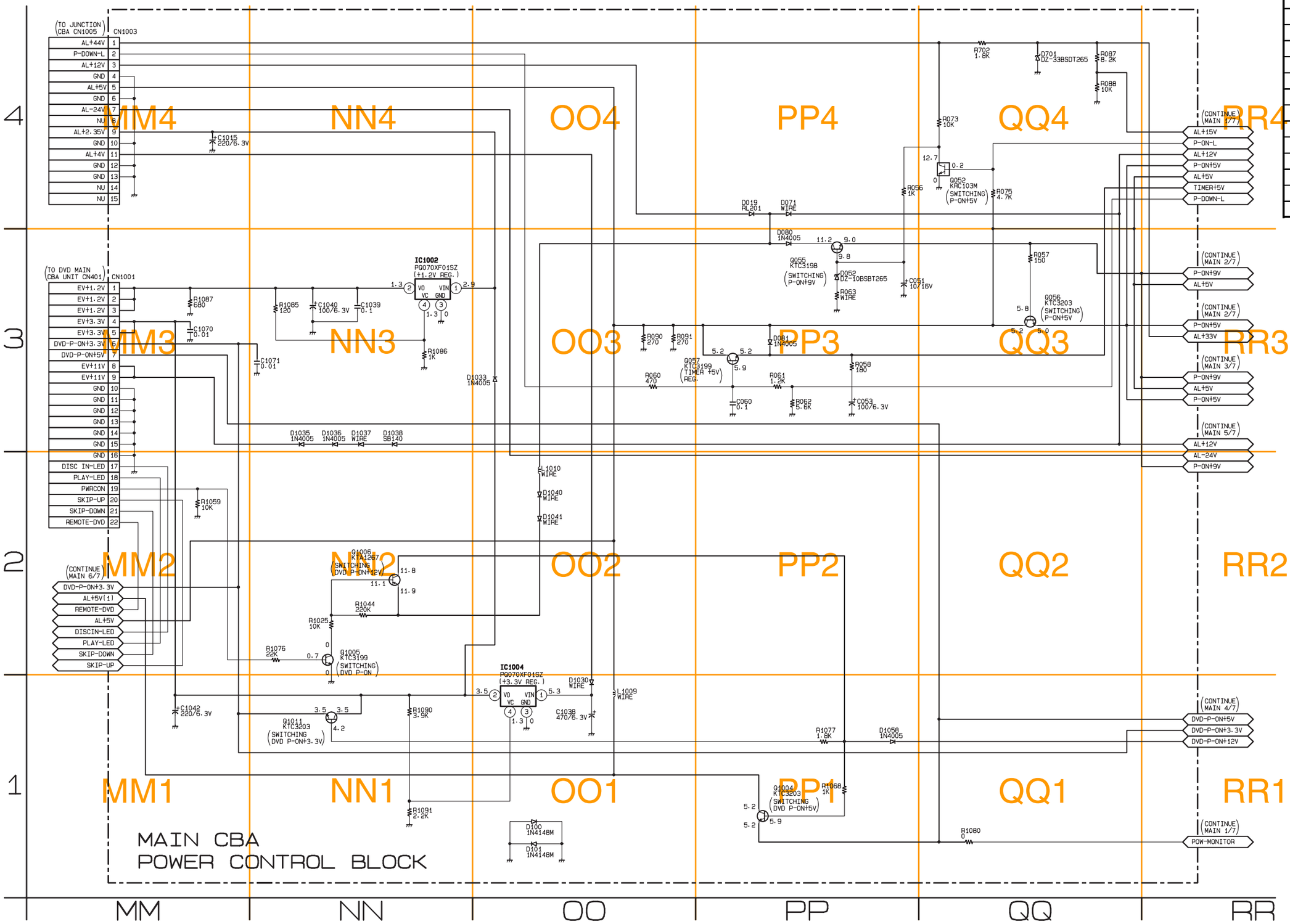
Ref No.	Position
TRANSISTORS	
Q2001	II-2
Q2002	HH-2
Q2003	HH-1
CONNECTORS	
CL2003	GG-4
CL2007	GG-4
CN2001	GG-3



Main 7/7 Schematic Diagram < VCR Section >

MAIN 7/7

Ref No.	Position
ICS	
IC1002	NN-3
IC1004	OO-1
TRANSISTORS	
Q052	QQ-4
Q055	PP-3
Q056	QQ-3
Q057	PP-3
Q1004	PP-1
Q1005	NN-2
Q1006	NN-2
Q1011	NN-1
CONNECTORS	
CN1001	MM-3
CN1003	MM-4



Power Supply Schematic Diagram < VCR Section >

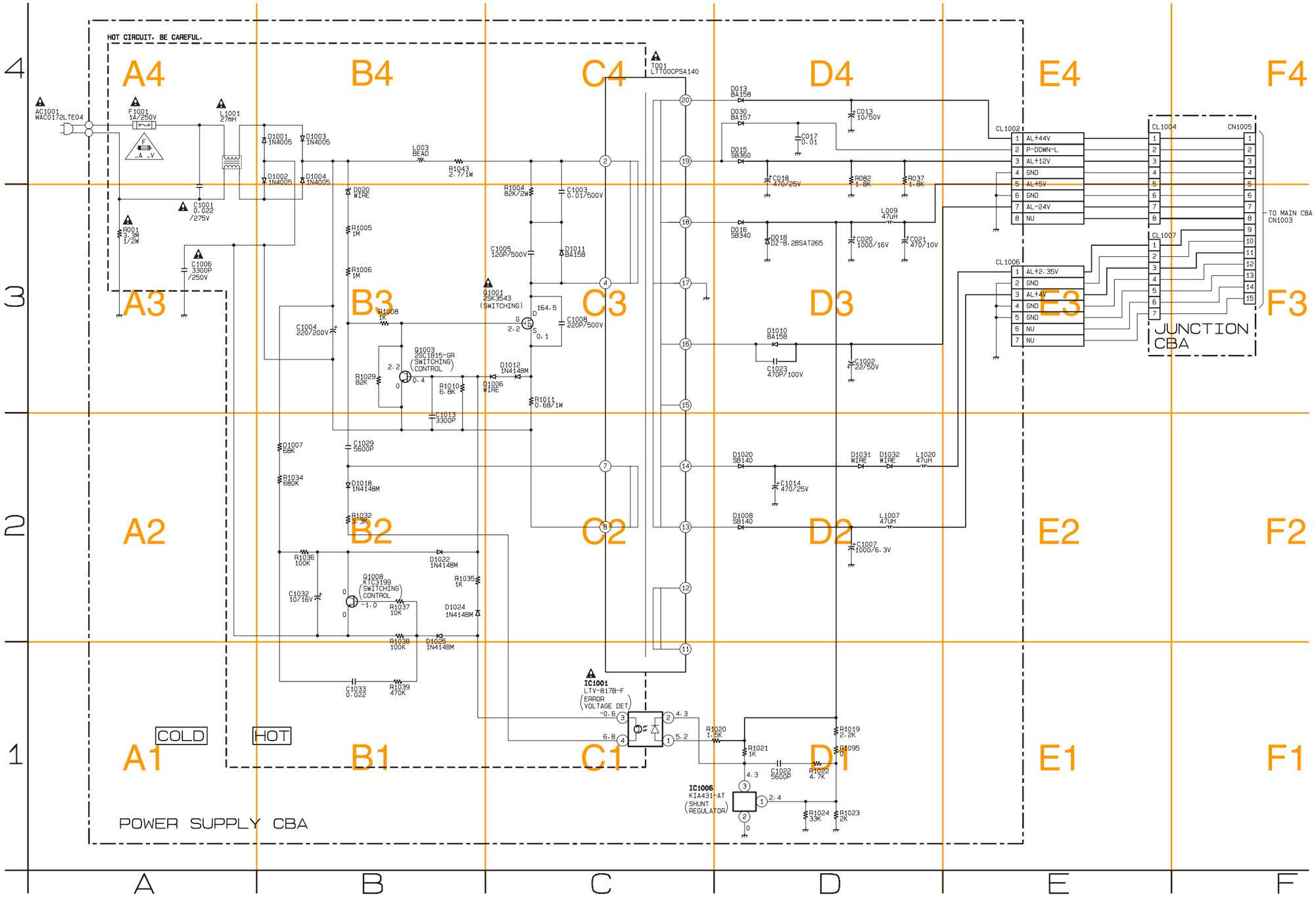
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

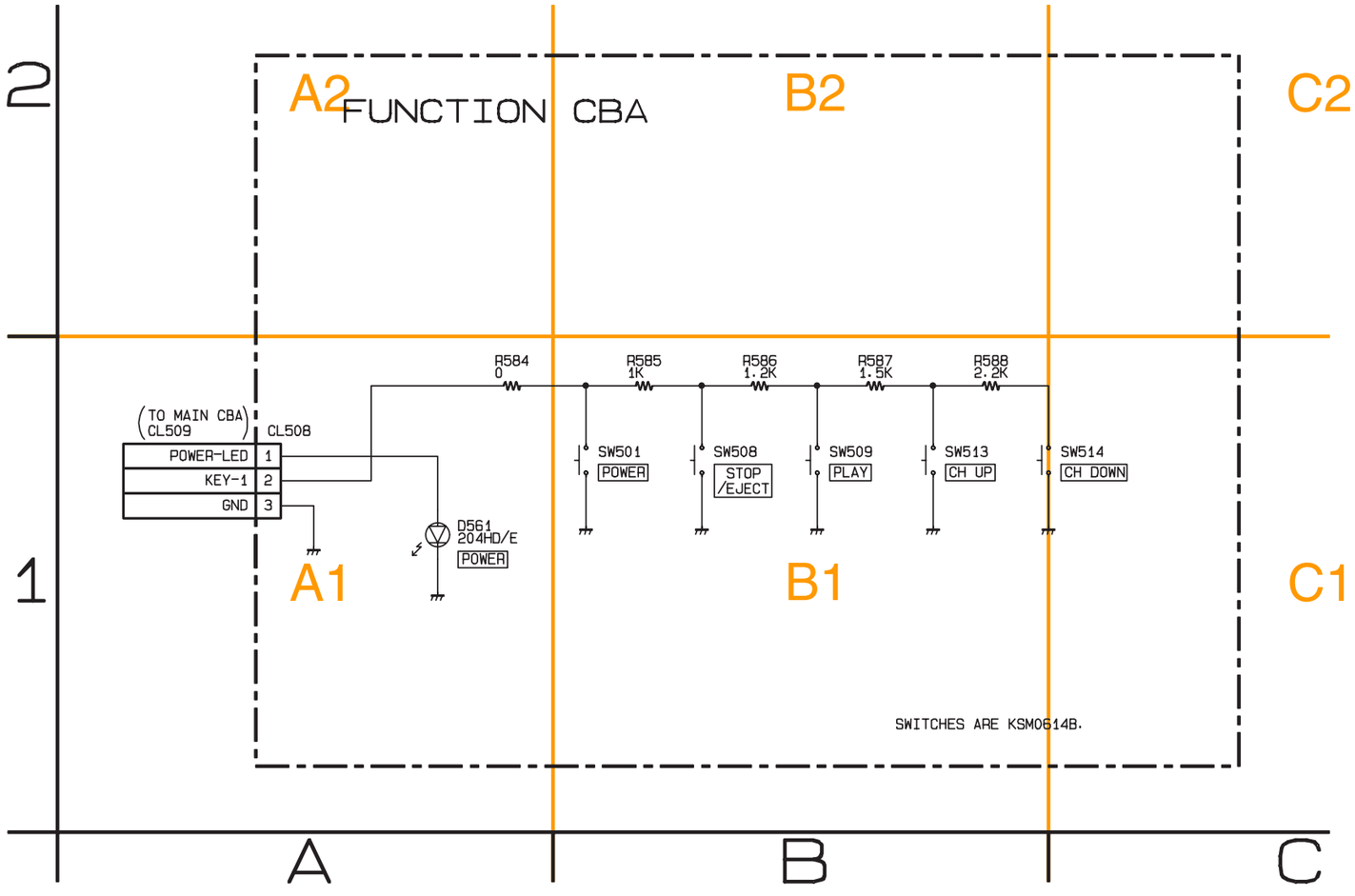
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Power Supply

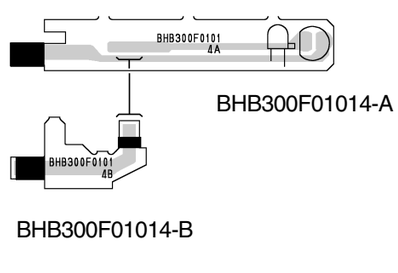
Ref No.	Position
ICS	
IC1001	C-1
IC1006	D-1
TRANSISTORS	
Q1001	C-3
Q1003	B-3
Q1008	B-2
CONNECTORS	
CL1002	E-4
CL1006	E-3

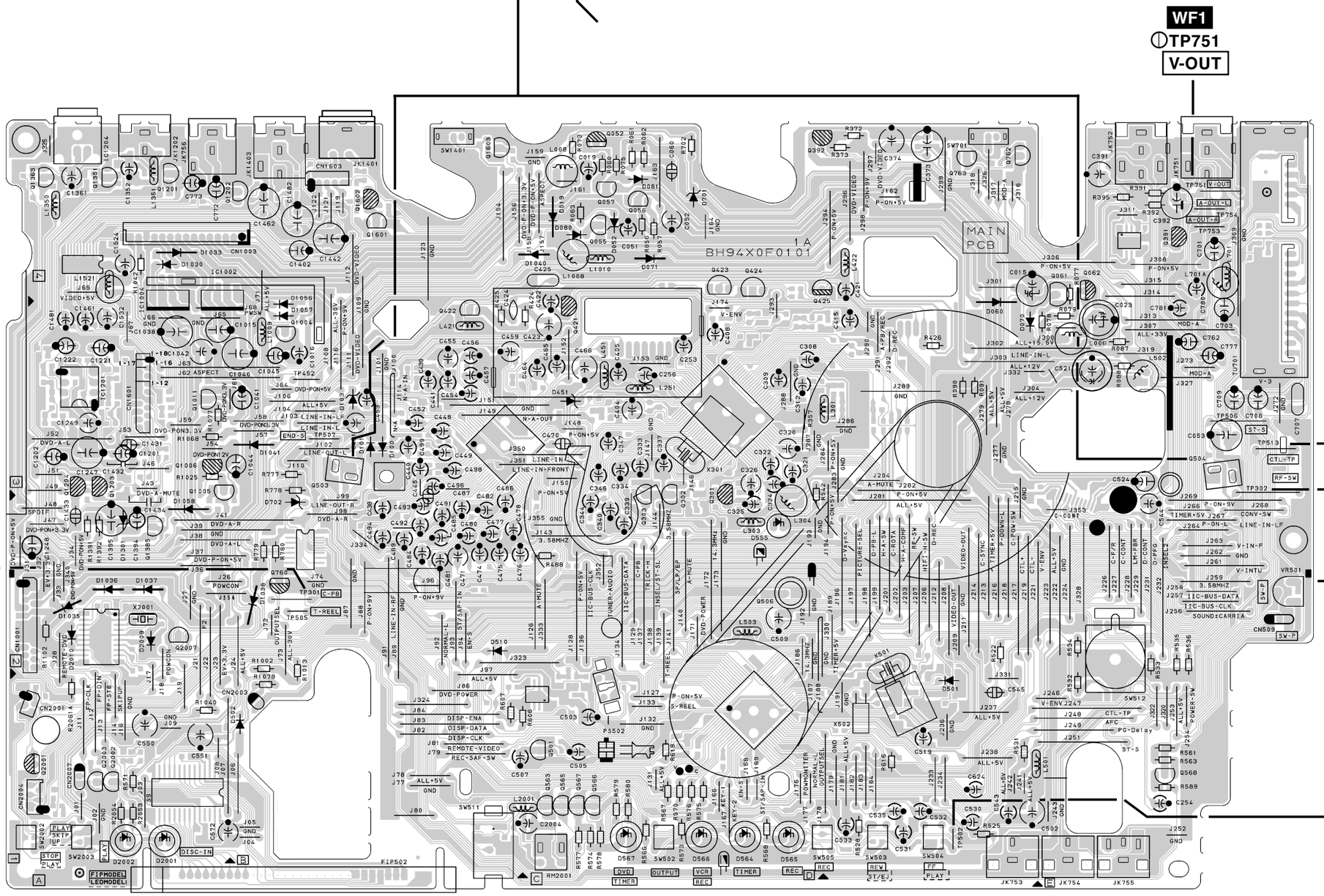



2
1
A2
FUNCTION CBA
B2
C2
A1
B1
C1
A
B
C
R584
0
R585
1K
R586
1.2K
R587
1.5K
R588
2.2K
(TO MAIN CBA
CL509
CL508
POWER-LED 1
KEY-1 2
GND 3
D561
204HD/E
POWER
SW501
POWER
SW508
STOP
/EJECT
SW509
PLAY
SW513
CH UP
SW514
CH DOWN
SWITCHES ARE KSM0614B.

Main CBA Top View

Sensor CBA Top View

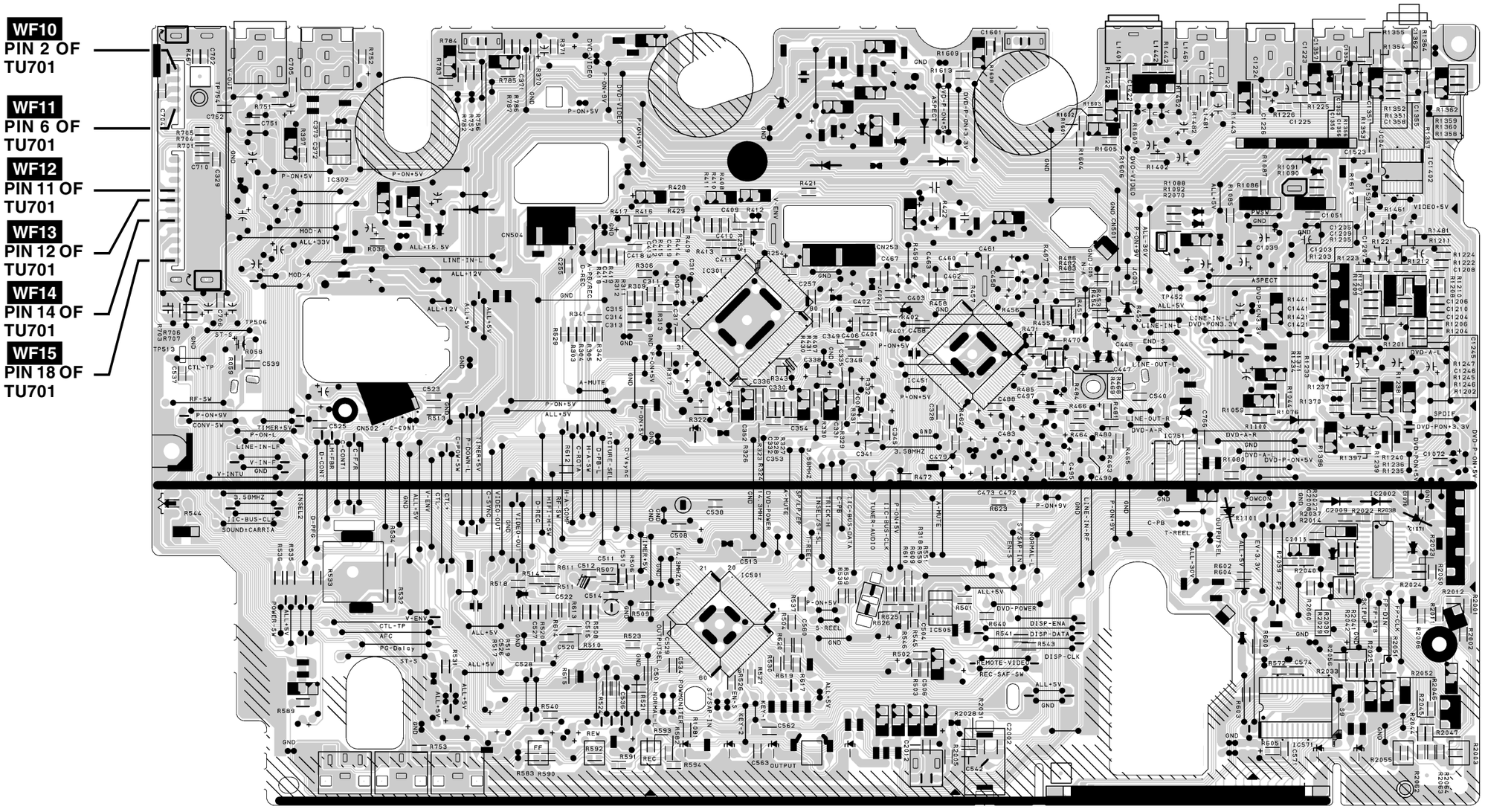




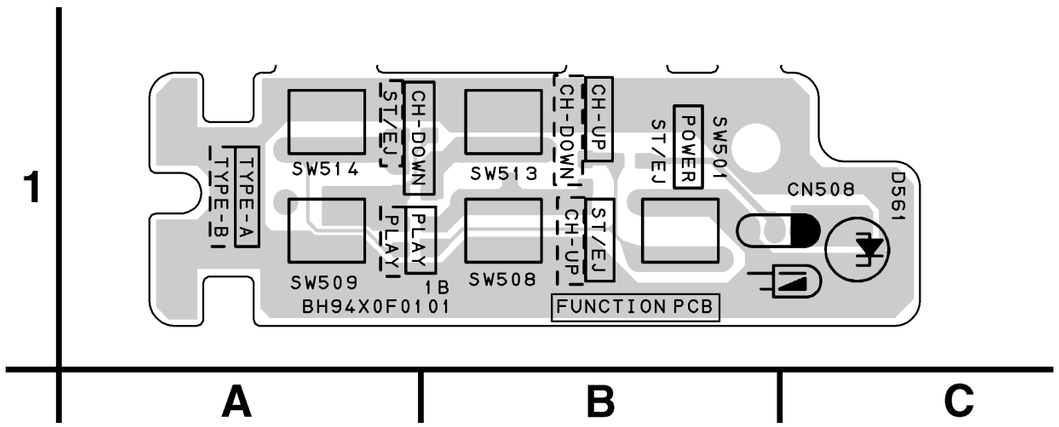
Main CBA Bottom View

MAIN CBA

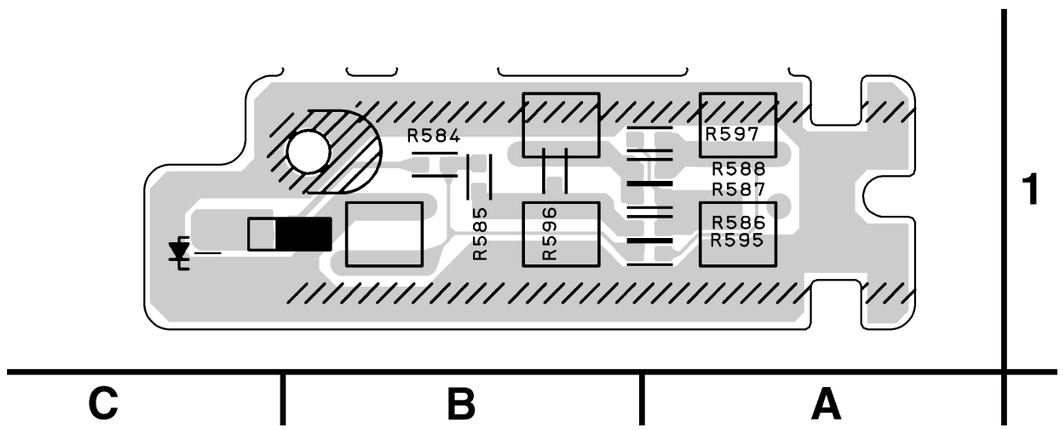
Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS		TRANSISTORS		TRANSISTORS		CONNECTORS		TEST POINTS	
IC301	C-3	Q057	C-4	Q565	C-1	Q1204	A-2	CL2007	A-1	TP506	E-3
IC451	C-3	Q301	C-2	Q566	C-1	Q1351	A-4	CN1001	A-2	TP507	B-3
IC501	C-2	Q302	C-2	Q567	C-1	Q1385	A-2	CN1003	A-4	TP513	E-3
IC571	A-1	Q303	C-2	Q760	B-2	Q2001	A-1	CN1601	A-3	TP751	E-4
IC751	B-2	Q391	E-4	Q762	D-4	Q2002	A-1	CN2001	A-1	TP753	E-4
IC1002	A-4	Q421	C-3	Q763	D-4	Q2003	A-1	VARIABLE RESISTORS		TP754	E-4
IC1004	A-3	Q422	B-3	Q1004	B-3	CONNECTORS		VR501	E-2		
IC1201	A-3	Q423	C-4	Q1005	A-3	CL253	C-3	TEST POINTS			
IC1402	A-4	Q424	C-4	Q1006	A-3	CL501	B-3	TP301	B-2		
TRANSISTORS		Q425	C-4	Q1011	A-3	CL502	E-3	TP302	E-3		
Q052	C-4	Q501	C-1	Q1201	A-4	CL504	D-3	TP452	B-3		
Q055	C-4	Q506	C-2	Q1202	B-4	CL509	E-3	TP502	D-1		
Q056	C-4	Q563	C-1	Q1203	A-3	CL2003	B-1	TP505	B-2		



Function CBA Top View

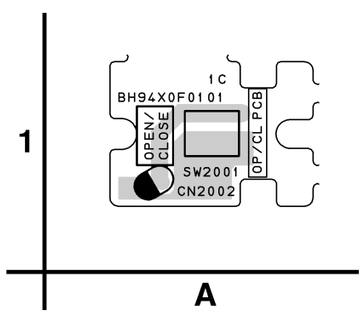


Function CBA Bottom View

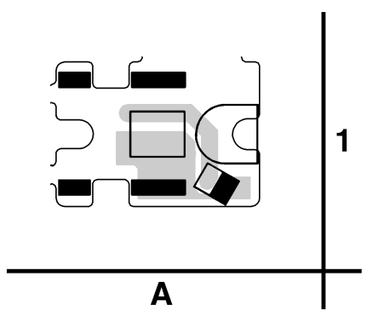


BH94X0F01011B

DVD OPEN/CLOSE CBA Top View

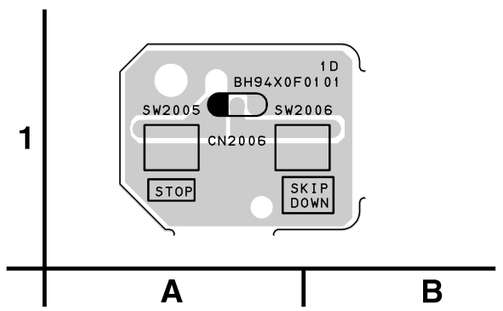


DVD OPEN/CLOSE CBA Bottom View

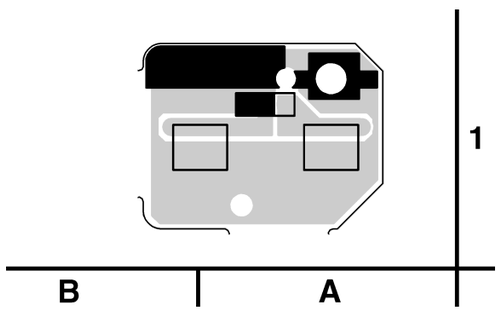


BH94X0F01011C

DVD SW CBA Top View



DVD SW CBA Bottom View



BH94X0F01011D

Power Supply CBA Top View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

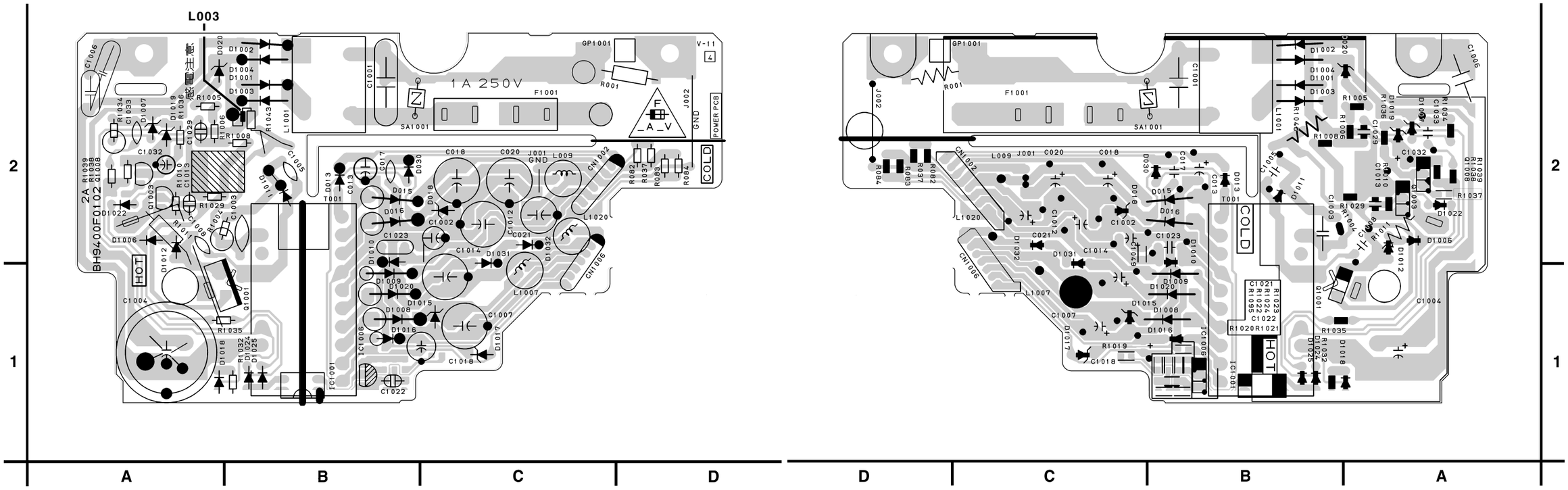
Power Supply CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

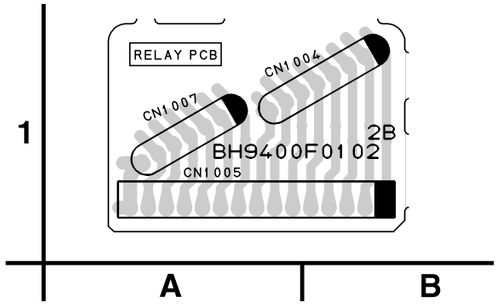
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Power Supply CBA in this S/M.

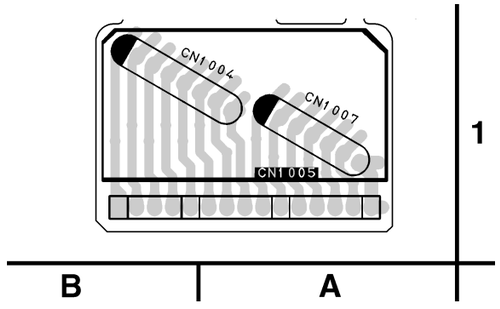


BH9400F01022A

Junction CBA Top View



Junction CBA Bottom View



BH9400F01022B

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Junction CBA in this S/M.

Power Supply CBA

Ref No.	Position
ICS	
IC1001	B-1
IC1006	B-1
TRANSISTORS	
Q1001	B-1
Q1003	A-2
Q1008	A-2
CONNECTORS	
CL1002	C-2
CL1006	C-1

Power Supply CBA Top View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

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"Ce symbole reprèsente un fusible à fusion rapide."

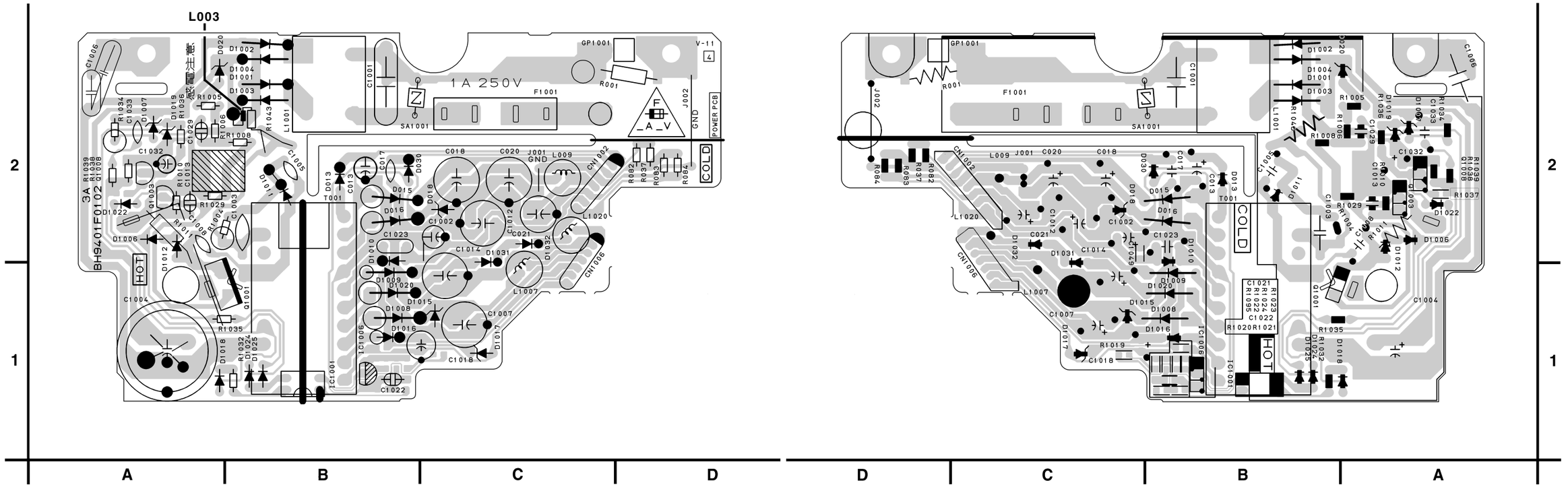
Power Supply CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

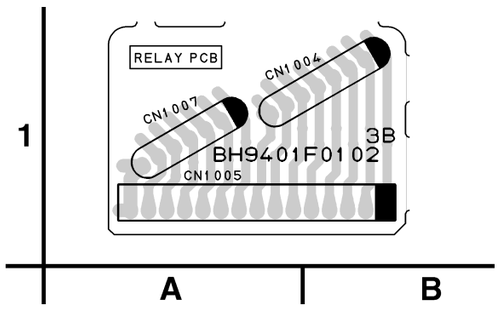
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Power Supply CBA in this S/M.

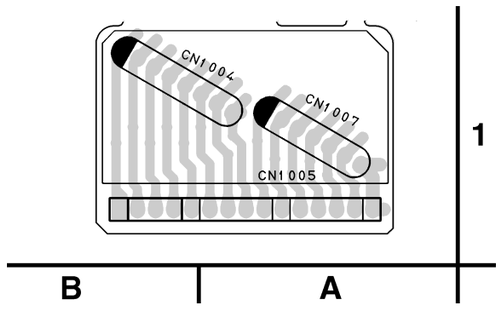


BH9401F01023A

Junction CBA Top View



Junction CBA Bottom View



NOTE :
Either BH9400F01022, BH9401F01023
is used for the Junction CBA in this S/M.

BH9401F01023B

Power Supply CBA

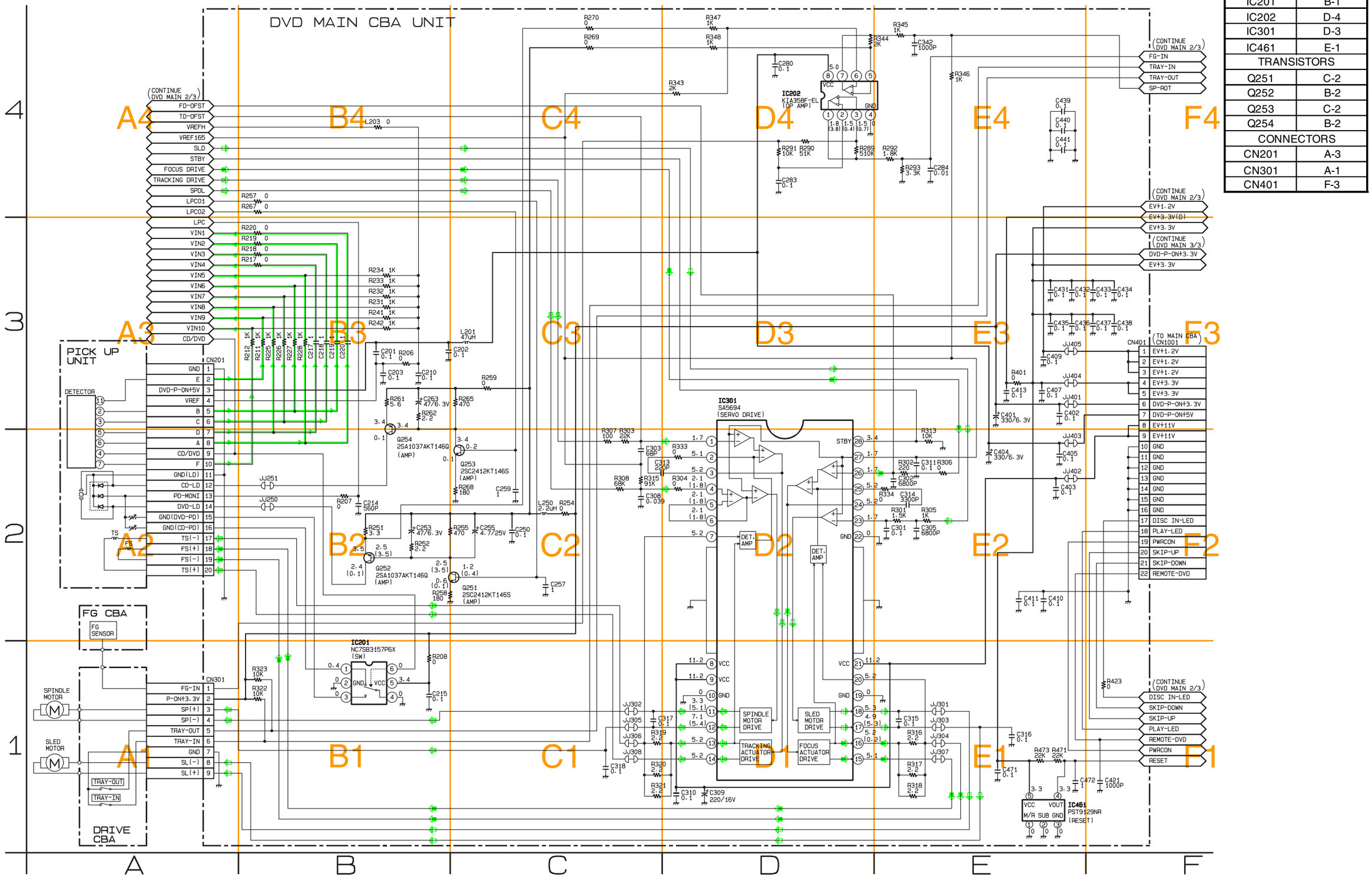
Ref No.	Position
ICS	
IC1001	B-1
IC1006	B-1
TRANSISTORS	
Q1001	B-1
Q1003	A-2
Q1008	A-2
CONNECTORS	
CL1002	C-2
CL1006	C-1

DVD Main 1/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)
TRACKING SERVO SIGNAL
SLIDE SERVO SIGNAL
FOCUS SERVO SIGNAL
SPINDLE SERVO SIGNAL

DVD MAIN 1/3

Ref No.	Position
ICS	
IC201	B-1
IC202	D-4
IC301	D-3
IC461	E-1
TRANSISTORS	
Q251	C-2
Q252	B-2
Q253	C-2
Q254	B-2
CONNECTORS	
CN201	A-3
CN301	A-1
CN401	F-3



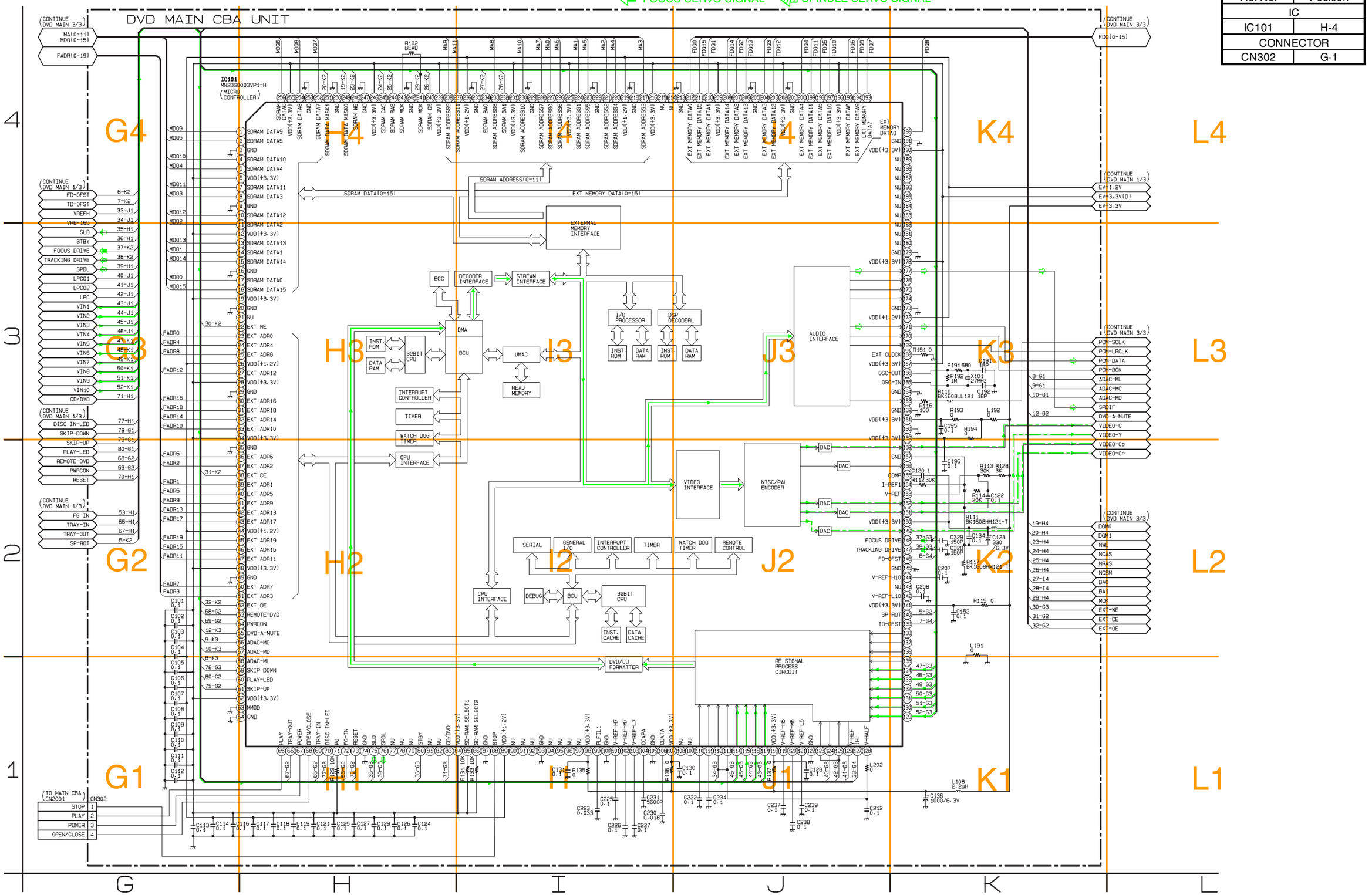
DVD Main 2/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)　TRACKING SERVO SIGNAL　SLIDE SERVO SIGNAL

FOCUS SERVO SIGNAL　SPINDLE SERVO SIGNAL

DVD MAIN 2/3

Ref No.	Position
IC	
IC101	H-4
CONNECTOR	
CN302	G-1



IC101 VOLTAGE CHART

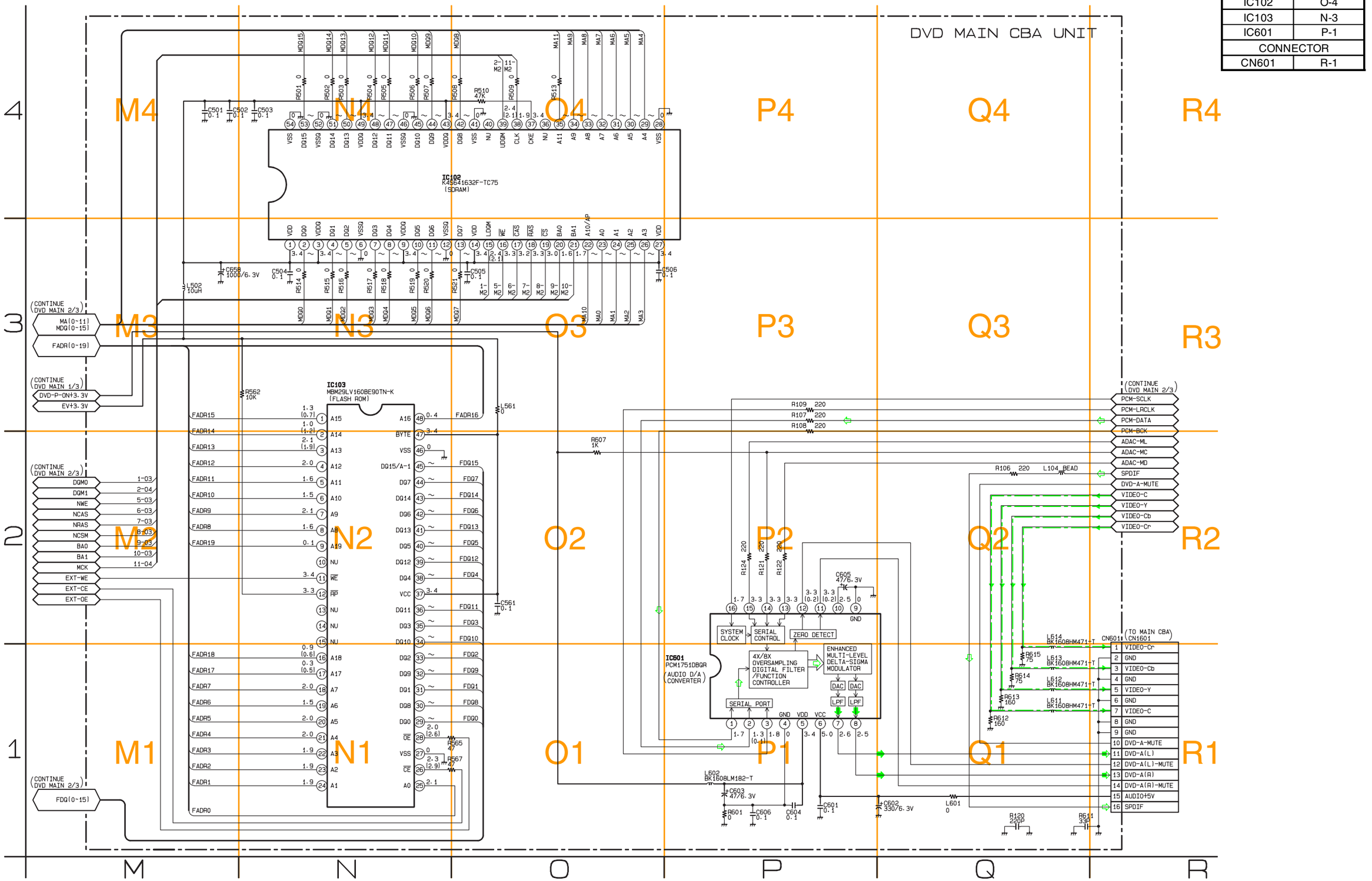
PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	3.3	3.3	97	-----	-----	129	2.3	2.3	161	3.3	3.3	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.4	98	3.3	3.3	130	2.2	2.2	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.3	3.3	99	0.9	0.9	131	2.4	2.4	163	1.6	1.6	195	~	~	227	~	~
4	~	~	36	~	~	68	3.3	3.3	100	0	0	132	2.4	2.4	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	3.4	3.4	101	1.6	1.6	133	2.4	2.4	165	1.5	1.5	197	~	~	229	0	0
6	3.4	3.4	38	2.2	2.9	70	3.3	3.3	102	2.1	2.1	134	2.4	2.4	166	1.6	1.6	198	~	~	230	~	~
7	~	~	39	~	~	71	0.1	0.1	103	2.6	2.6	135	-----	-----	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.2	2.5	104	0.3	0.3	136	-----	-----	168	0	0	200	~	~	232	1.7	1.7
9	0	0	41	~	~	73	3.4	3.4	105	0	0	137	-----	-----	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.4	1.4	138	-----	-----	170	1.7	1.7	202	3.4	3.4	234	1.6	1.6
11	~	~	43	0.3	0.5	75	1.7	1.7	107	3.3	3.3	139	1.7	1.7	171	1.4	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.4	1.7	108	-----	-----	140	1.9	1.7	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	0.1	0.1	77	-----	-----	109	-----	-----	141	3.3	3.3	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	3.4	3.4	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	-----	-----	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	3.4	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.0	3.0
17	~	~	49	0	0	81	-----	-----	113	1.7	1.7	145	0	0	177	1.7	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	-----	-----	114	2.0	2.0	146	1.7	1.7	178	3.4	3.4	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	2.0	2.0	147	1.7	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	2.0	2.6	84	3.4	3.4	116	2.0	2.0	148	1.7	1.7	180	-----	-----	212	~	~	244	3.3	3.3
21	-----	-----	53	3.1	3.1	85	3.4	3.4	117	2.0	2.0	149	0.7	0.7	181	-----	-----	213	0	0	245	3.2	3.2
22	3.4	3.4	54	3.4	3.4	86	3.4	3.4	118	3.3	3.3	150	3.3	3.3	182	-----	-----	214	-----	-----	246	3.4	3.4
23	~	~	55	3.4	0.1	87	0	0	119	2.0	2.0	151	0.4	0.4	183	-----	-----	215	-----	-----	247	0	0
24	~	~	56	3.4	3.4	88	3.3	3.3	120	1.7	1.7	152	0.4	0.4	184	-----	-----	216	3.4	3.4	248	3.3	3.3
25	~	~	57	3.4	3.4	89	1.3	1.3	121	1.5	1.5	153	1.4	1.4	185	-----	-----	217	~	~	249	2.4	2.1
26	1.3	1.3	58	3.4	3.4	90	-----	-----	122	0	0	154	1.4	1.4	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.4	0.1	155	2.2	2.2	187	-----	-----	219	1.3	1.3	251	2.4	2.1
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.2	0.4	156	-----	-----	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.3	3.3	93	0	0	125	0.4	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	0.4	0.4	62	3.4	3.4	94	-----	-----	126	0.2	0.2	158	0.9	0.9	190	3.4	3.4	222	0	0	254	~	~
31	0.9	0.6	63	0	0	95	-----	-----	127	2.3	2.3	159	3.3	3.3	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >

VIDEO SIGNAL SPINDLE SERVO SIGNAL DATA(AUDIO)

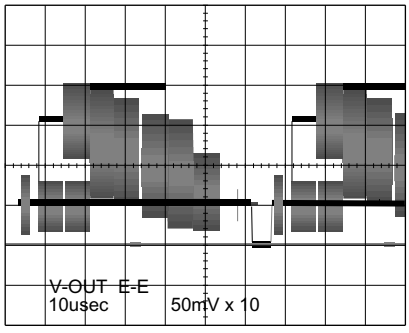
DVD MAIN 3/3

Ref No.	Position
ICS	
IC102	O-4
IC103	N-3
IC601	P-1
CONNECTOR	
CN601	R-1



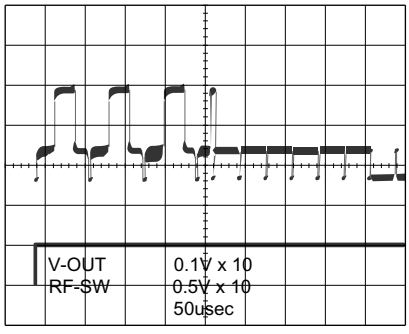
WAVEFORMS

WF 1 (TP751 of Main CBA)



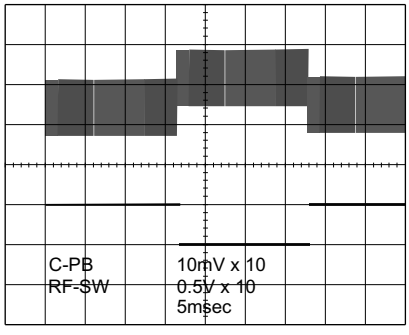
WF1 UPPER (TP751 of Main CBA)

WF2 LOWER (TP302 of Main CBA)

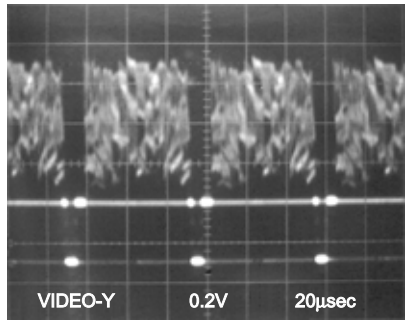


WF3 UPPER (TP301 of Main CBA)

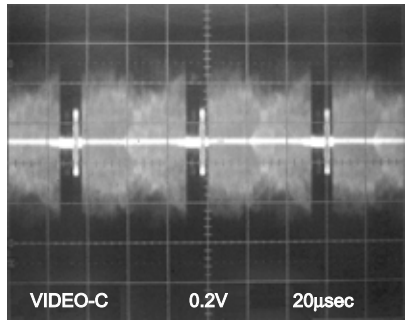
WF2 LOWER (TP302 of Main CBA)



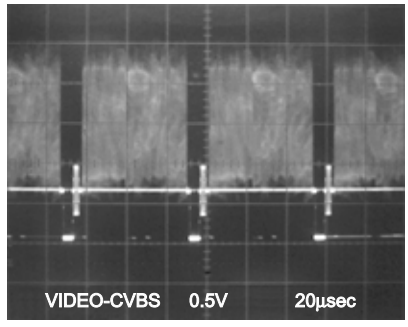
WF4 Pin 5 of CN1601



WF5 Pin 7 of CN1601

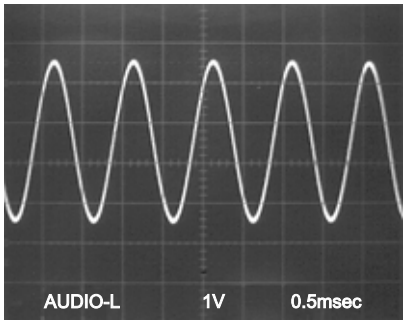


WF6 Pin 21 of IC1402

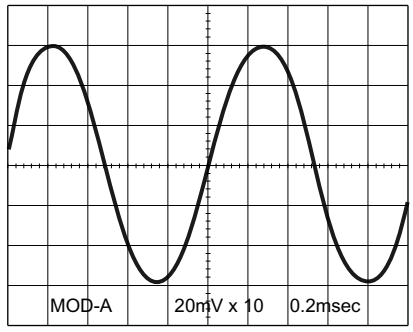


WAVEFORMS

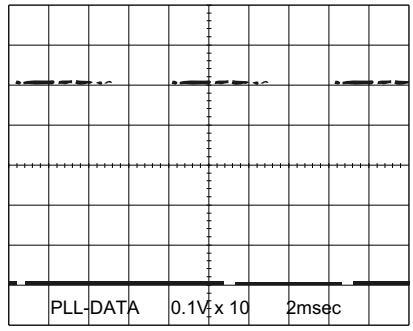
WF7 Pin 11 of CN1601



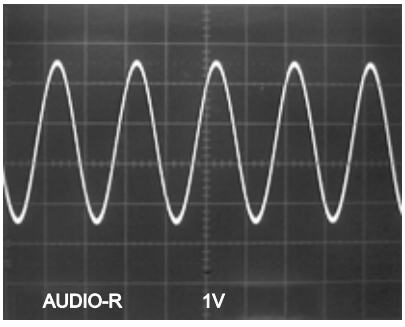
WF10 (Pin 2 of TU701)



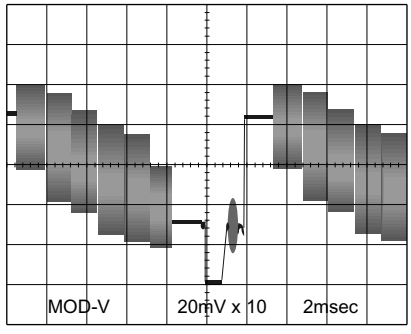
WF13 (Pin 12 of TU701)



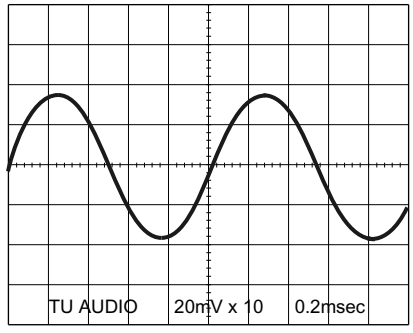
WF8 Pin 13 of CN1601



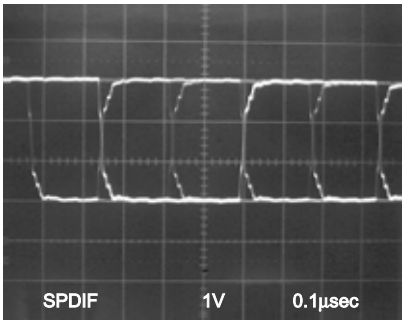
WF11 (Pin 6 of TU701)



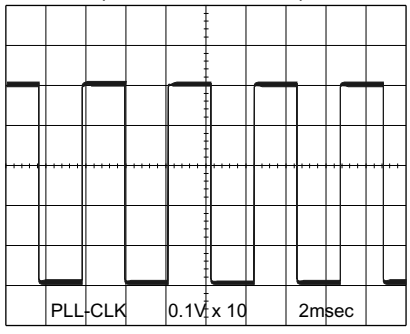
WF14 (Pin 14 of TU701)



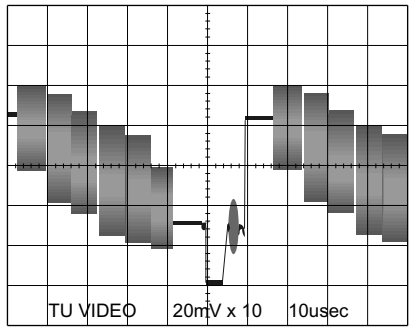
WF9 Pin 16 of CN1601



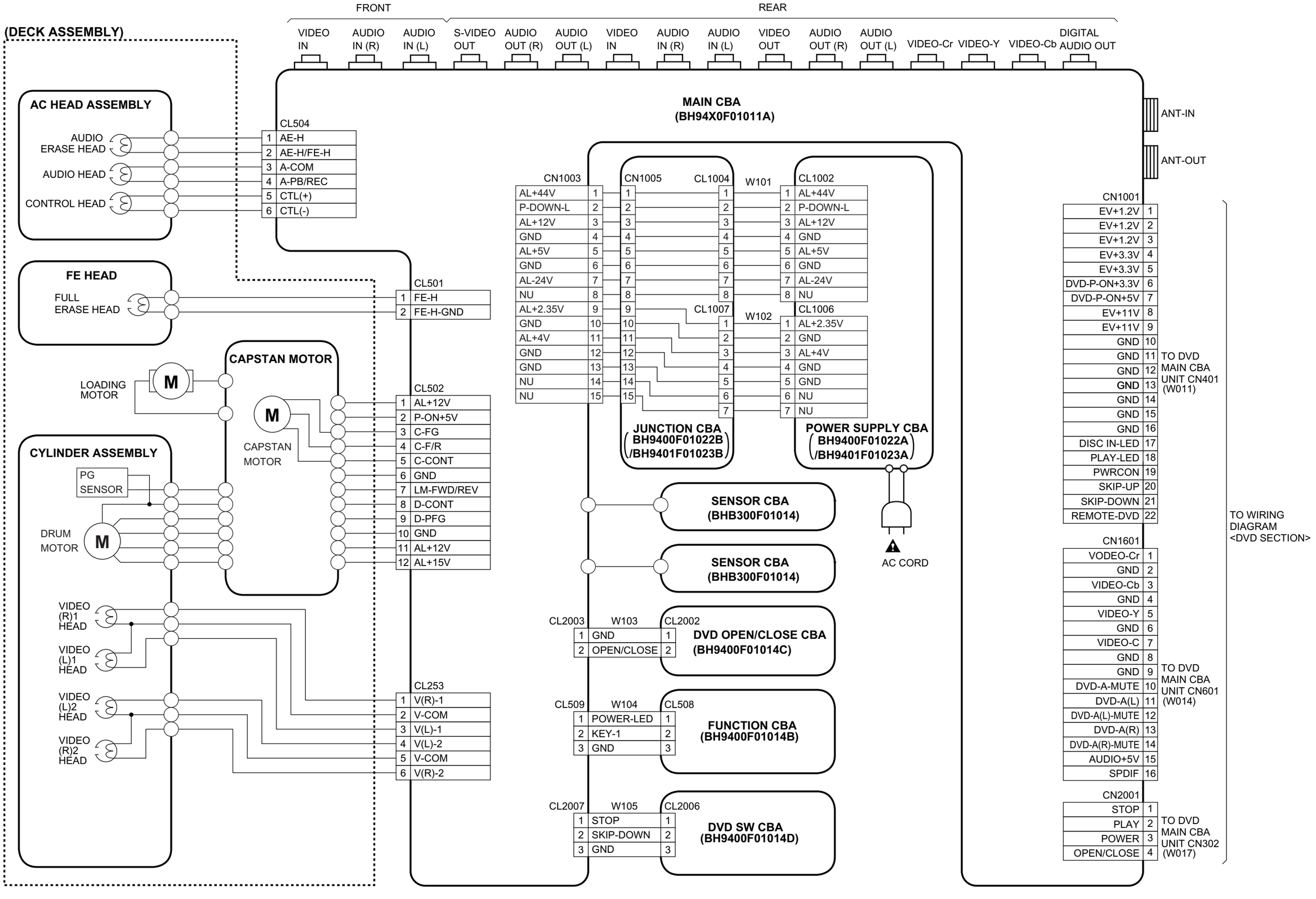
WF12 (Pin 11 of TU701)



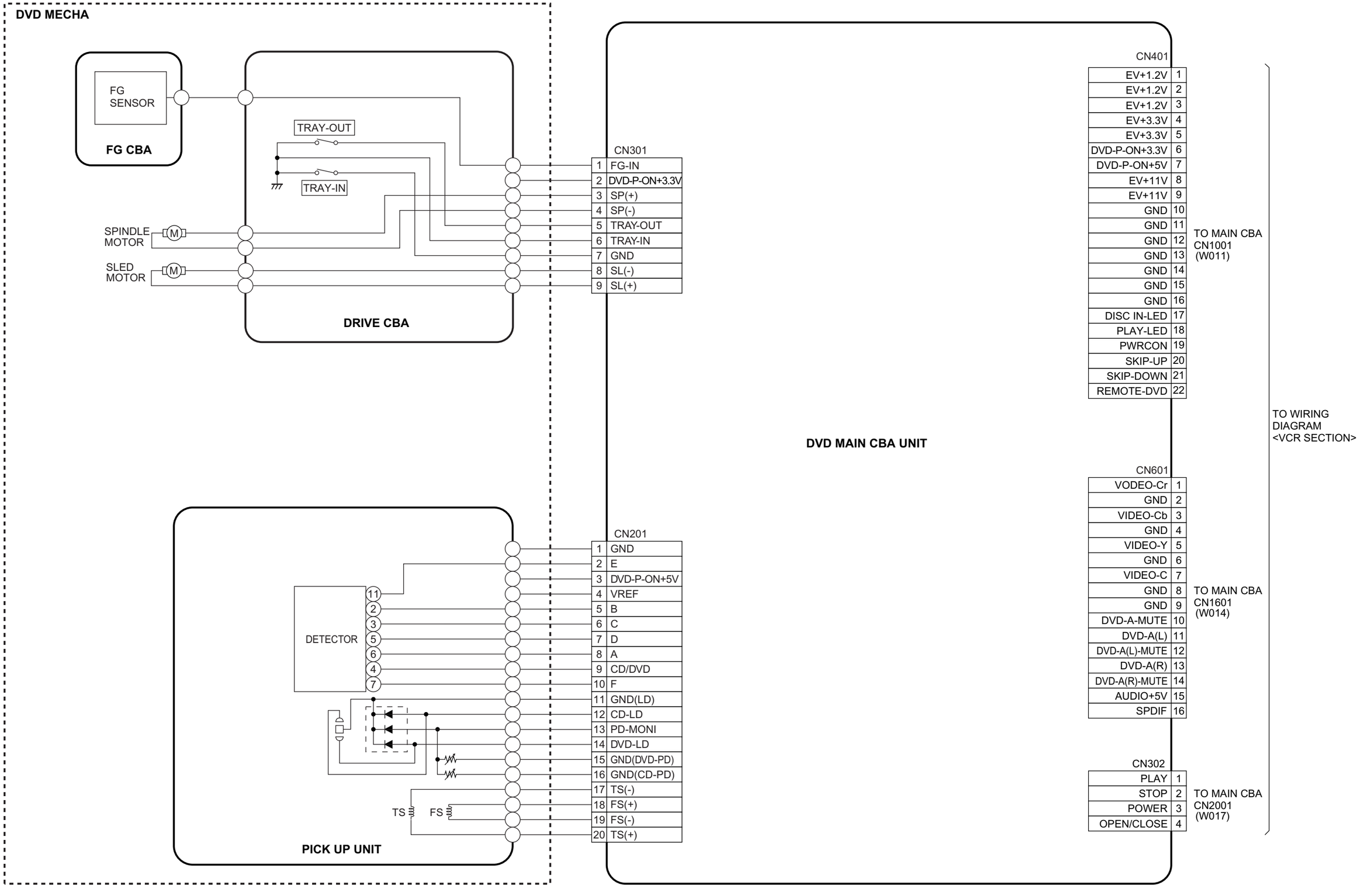
WF15 (Pin 18 of TU701)



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



SYSTEM CONTROL TIMING CHARTS

[VCR Section]

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note:

EJ → RS: Loading FWD (LM-FWD/REV “H”)
RS → EJ: Loading REV (LM-FWD/REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control
Frame Advance Timing Chart

1) SP Mode

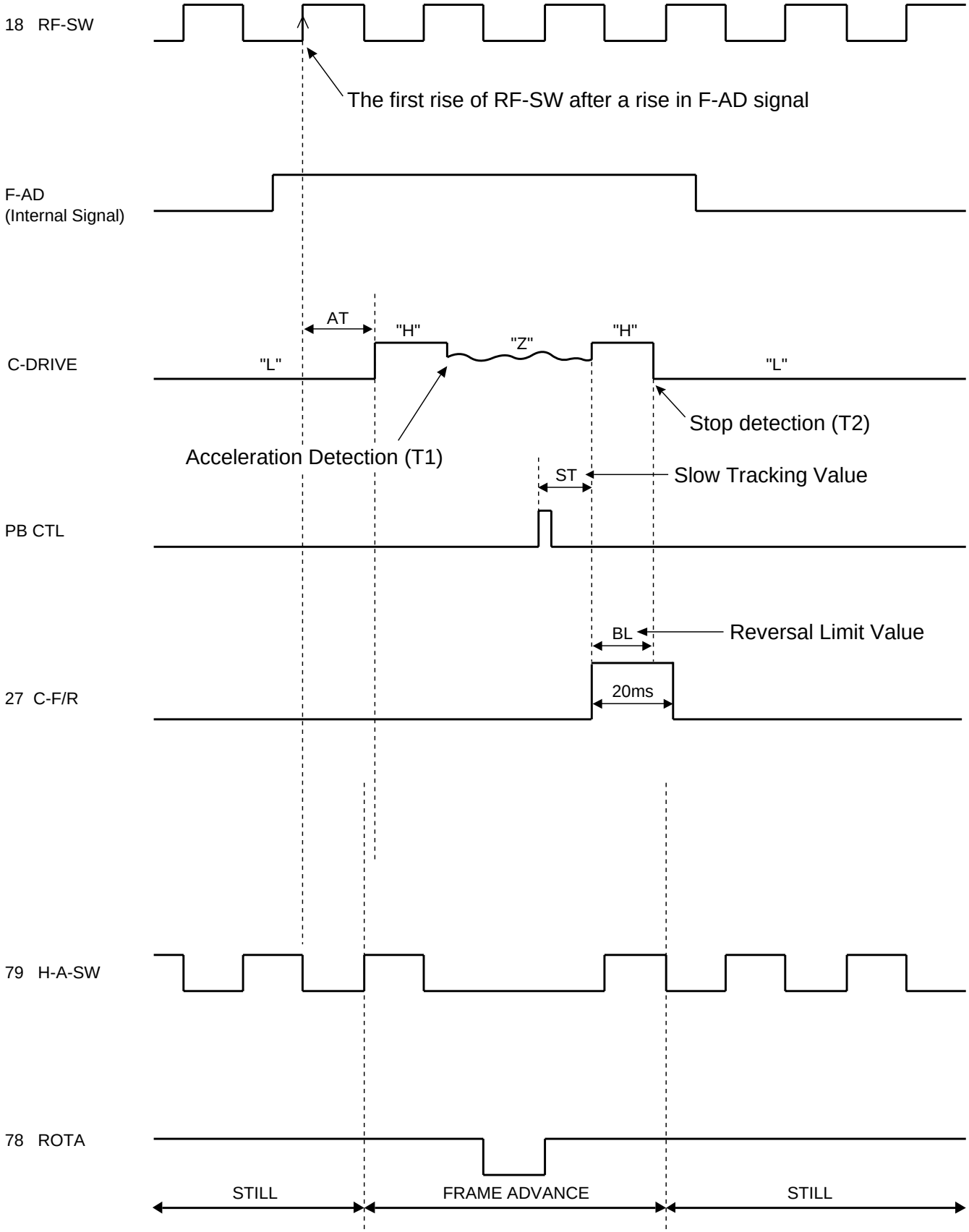


Fig. 1

2) LP/SLP Mode

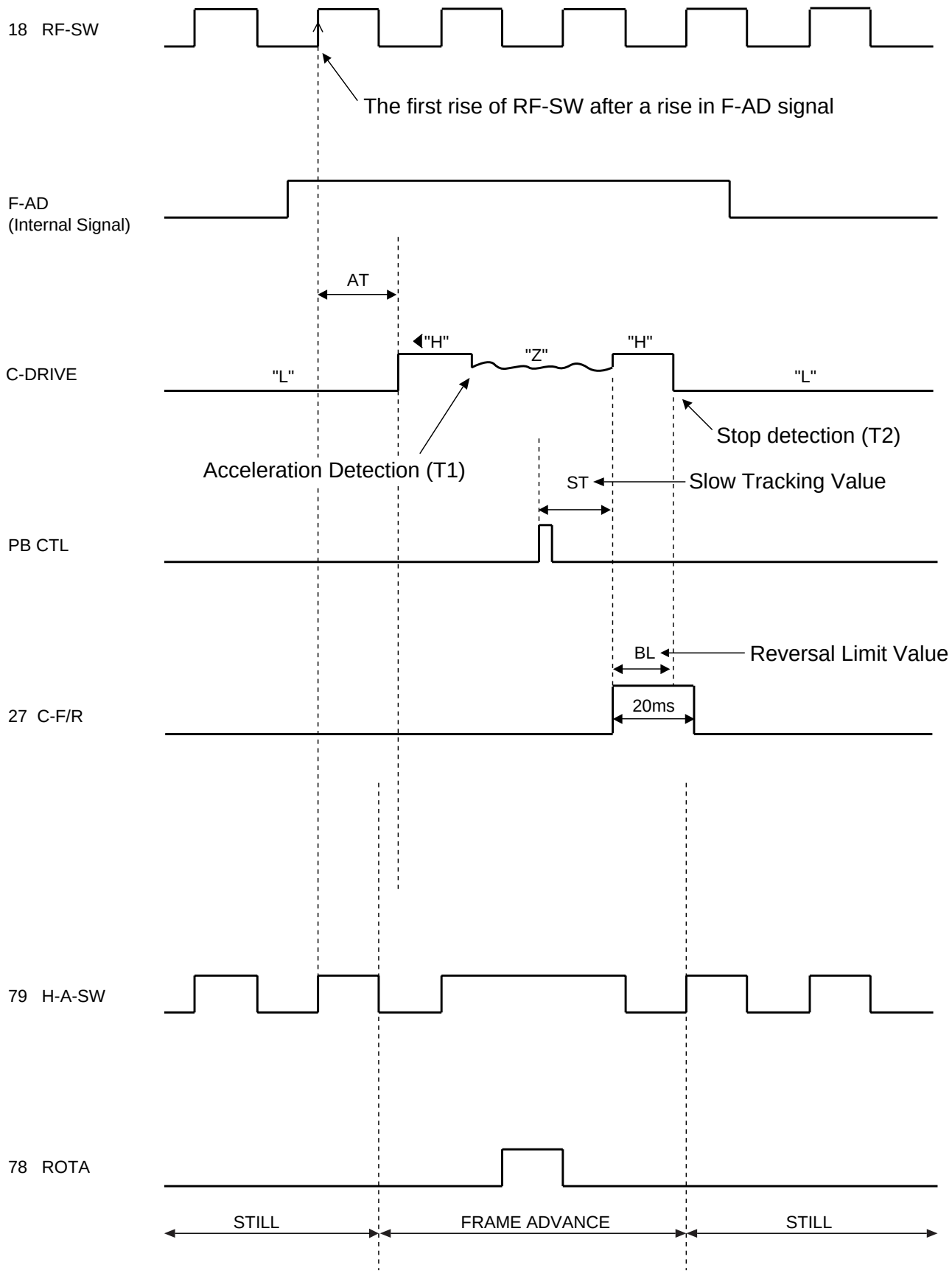


Fig. 2

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

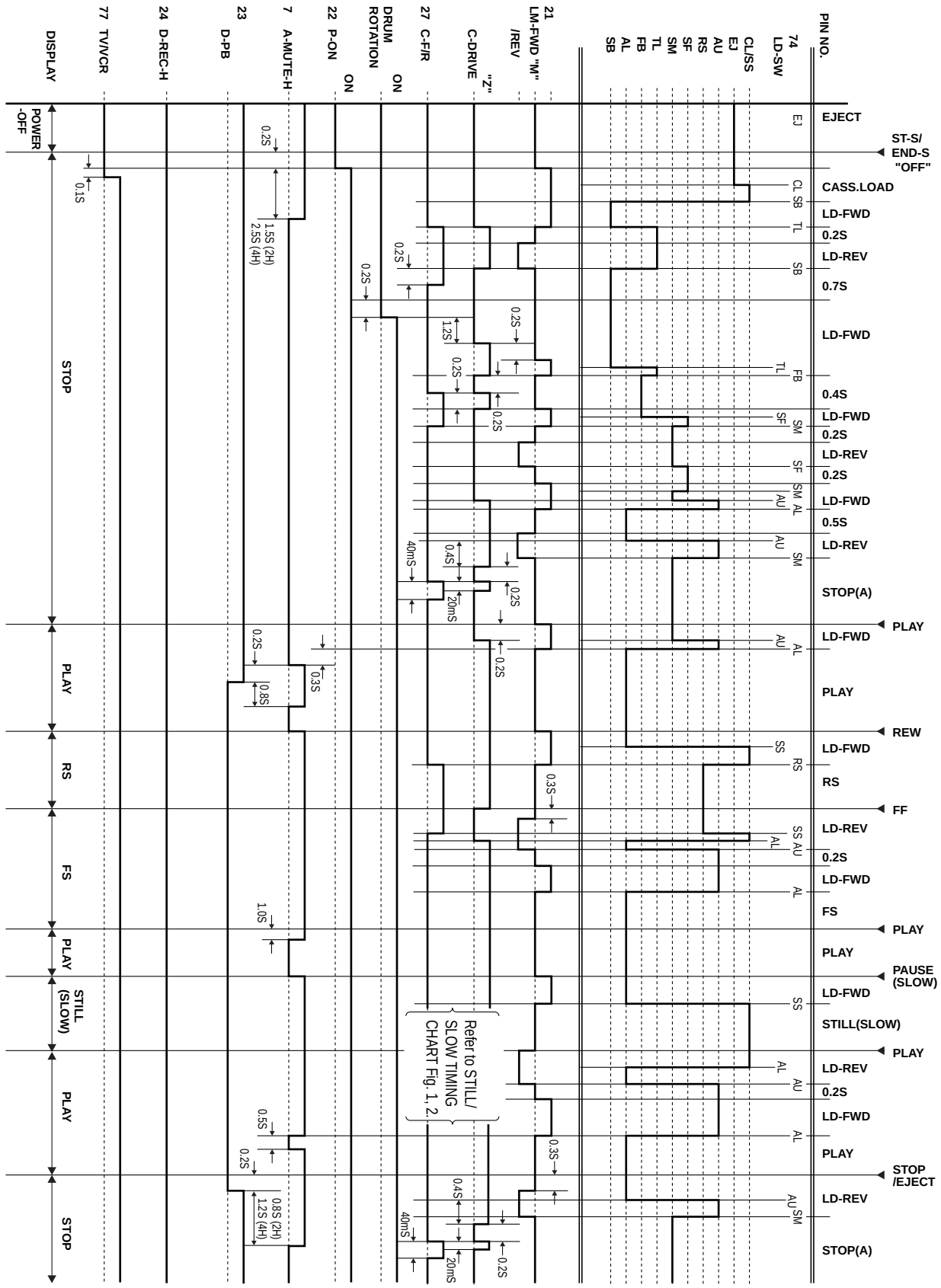


Fig. 3

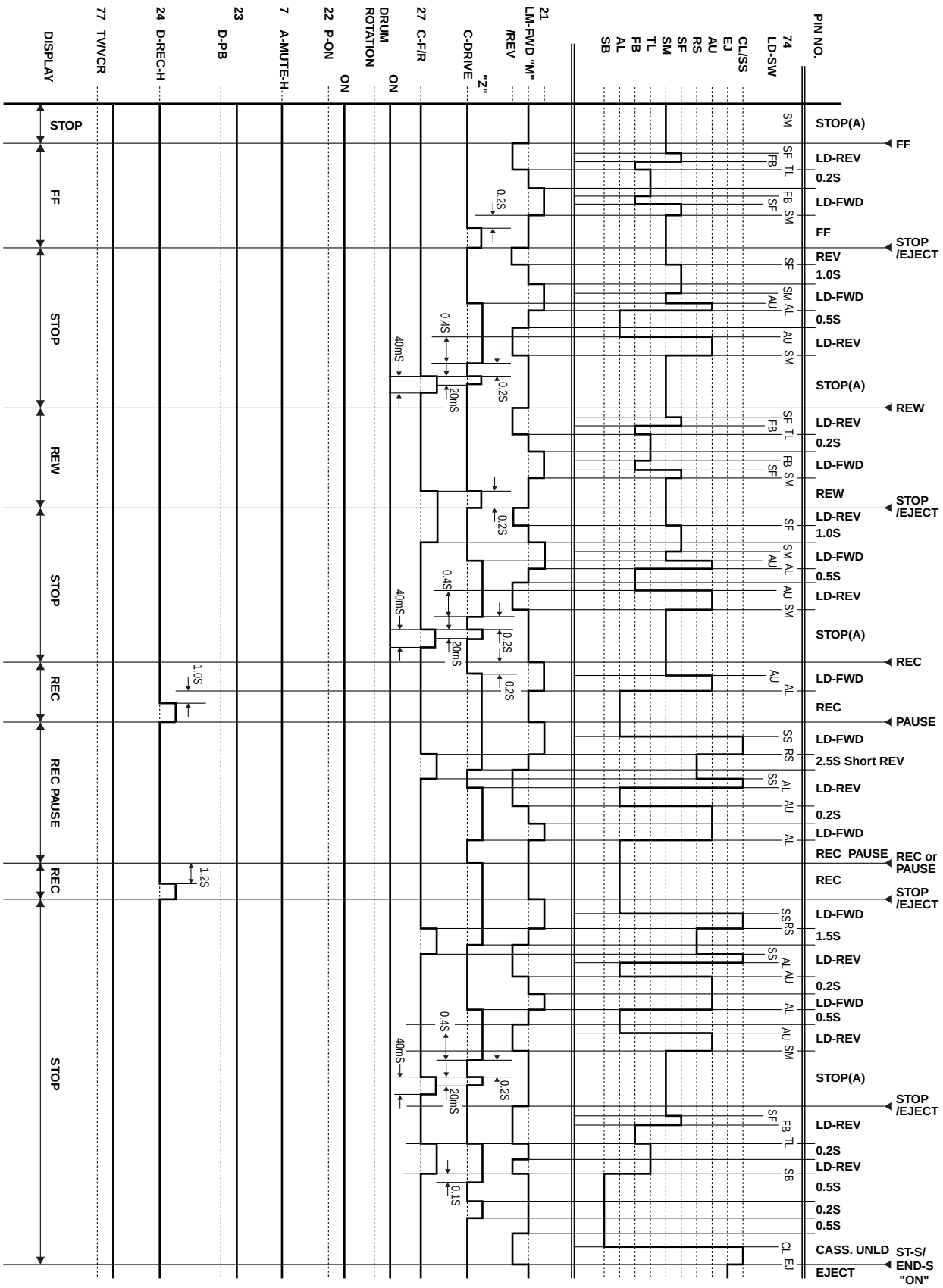
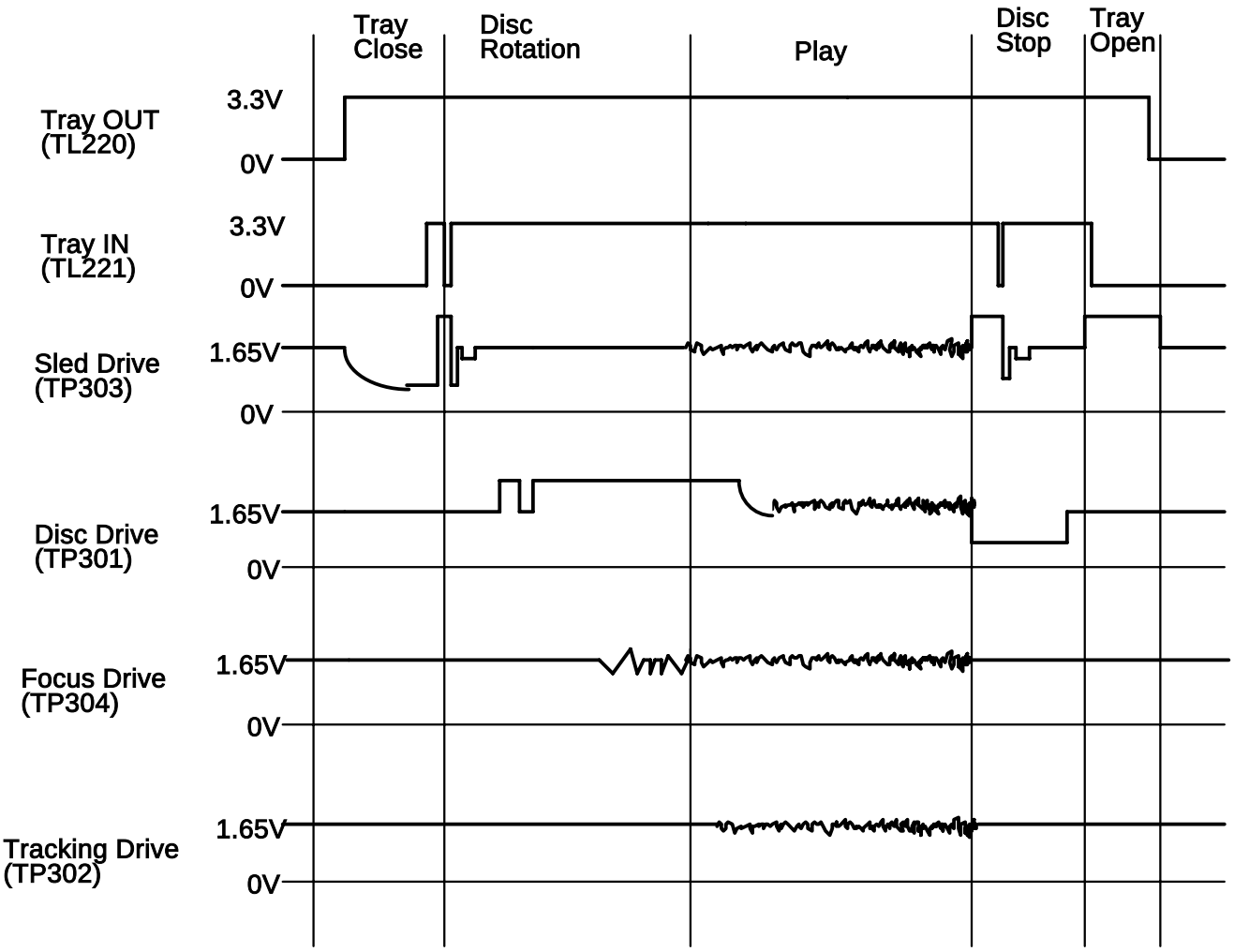

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
STOP
FF
REW
REC
REC PAUSE
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
REV
1.0S
0.5S
REW
REC
PAUSE
2.5S Short REV
REC or PAUSE
1.5S
CASS. UNLD
EJECT
STOP /EJECT
ST-S/ END-S "ON"
0.4S
40mS
20mS
0.1S
1.0S
1.2S

Fig. 4

[DVD Section]

Tray Close ~ Play / Play ~ Tray Open



IC PIN FUNCTION DESCRIPTIONS

IC501(SERVO / SYSTEM CONTROL IC)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pins that have * in the Pin No. section on table below are not used.

Pin No.	IN/ OUT	Signal Name	Function	Active Level
1	IN	P-DOWN -L	Power Voltage Down Detector Signal	L
2	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H")	H/L
3	IN	T-REEL	Take Up Reel Rotation Signal	PULSE
4	-	N.U.	Not Used	-
5	IN	REMOTE -VIDEO	Remote Control Sensor	L
6	-	N.U.	Not Used	-
7	OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")	H
8	-	N.U.	Not Used	-
9	-	N.U.	Not Used	-
10	-	N.U.	Not Used	-
11	OUT	TRICK-H	Special Playback= "H"	H/Z/L
12	IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data	H/L
13	OUT	IIC-BUS-SCL	IIC BUS Control Clock	H/L
14	OUT	SP/LP/ SLP	Top Speed Select Signal (SP="L"/ LP="Z"/SLP="H")	H/Z/L
15	-	N.U.	Not Used	-
16	OUT	INSEL/ ST-SL	Input Selector Control Signal (EE/ Rec)/Still/Slow (Playback)	H/Hi-z /L
17	-	N.U.	Not Used	-
18	OUT	RF-SW	Video Head Switching Pulse	H/L
19	OUT	D-V SYNC	Dummy V-sync Output	H/Hi-z
20	IN	RESET	System Reset Signal (Reset="L")	L
21	OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output	H/Z/L
22	OUT	P-ON-L	Power On Signal to Low	L
23	OUT	D-PB-L	Playback Instruction Signal	L
24	OUT	D-REC-H	Delayed Record Signal	H
25	-	N.U.	Not Used	-
26	OUT	DVD-POWER	DVD Power Control Signal	H
27	OUT	C-F/R	Capstan Motor FWD/ REV Control Signal (FWD="L"/REV="H")	H/L
28	OUT	C-CONT	Capstan Motor Control Signal	PWM
29	OUT	D-CONT	Drum Motor Control Signal	PWM
30	-	N.U.	Not Used	-
31	-	VDD	VDD	-
32	OUT	OSCO	Main Clock Output 14.31818MHz	-
33	IN	OSCI	Main Clock Input 14.31818MHz	-
34	-	VSS	VSS	
35	IN	XI	Sub Clock Input 32.768 MHz	-
36	OUT	XO	Sub Clock Output 32.768 MHz	-
37	IN	SXI	Operation Mode Selecting Input Signal	-
38	OUT	VIDEO-OUT	Composite Video Signal Output	-
39	-	Vss2	Vss2	-
40	IN	VIDEO-IN	Composite Video Signal Input	
41	IN	C-SYNC	Composite Synchronized Pulse	PULSE
42	-	VDD2	VDD2	-
43	IN	AFCC	Low Path Filter Input Signal For AFC	-
44	OUT	AFCLPF	Low Path Filter Output Signal For AFC	-
45	-	N.U.	Not Used	-
46	OUT	OUTPUT-SELECT	Output Select	H/L
47	IN	D-PFG	Drum PG/FG Input Signal	PULSE

Pin No.	IN/ OUT	Signal Name	Function	Active Level
48	-	N.U.	Not Used	-
49	IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
50	-	AFG	GND	-
51	OUT	VRO	Servo Standard Voltage Output	-
52	IN	VRI	Servo Standard Voltage Input	-
53	-	AVss	AVSS	-
54	IN	CTLA	CTL Amp. AC GND	-
55	-	AVDD	AVDD	-
56	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)	-
57	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)	-
58	OUT	CTL	Amp. Output Control Signal for Test Point	-
59	-	N.U.	Not Used	-
60	IN	POW-MONITOR	DVD Power Monitor Signal (P-off="L", P-on="H")	H/L
61	-	N.U.	Not Used	-
62	IN	END-S	Tape End Position Detect Signal	A/D
63	IN	AFC	Automatic Frequency Control Signal	A/D
64	IN	V-ENV	Video Envelope Comparator Signal	A/D
65	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
66	IN	KEY-2	A/D Key Data Signal 2	A/D
67	IN	KEY-1	A/D Key Data Signal 1	A/D
68	IN	LD-SW	Deck Mode Position Detector Signal	A/D
69	IN	ST-S	Tape Start Position Detector Signal	A/D
70	OUT	VCR-IND	VCR Mode LED Signal Output	H/L
71	OUT	DVD-IND	DVD Mode LED Signal Output	H/L
72	OUT	REC-IND	REC Mode LED Signal Output	L
73	-	N.U.	Not Used	-
74	-	N.U.	Not Used	-
75	OUT	TIMER-IND	“TIMER” LED Signal Output	H/L
76	OUT	CONV-SW	RF Conv. Output Channel Switching Signal 3ch=”Hi-z”, 4ch=”L”	Hi-z/L
77	OUT	VCR/TV	RF Conv. ON/OFF Signal (TV="L"/ VCR="H")	H/L
78	OUT	C-ROTA	Color Phase Rotary Changeover SIgnal	H/L
79	OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
80	IN	H-A-COMP	Head Amp Comparator Signal	H/L

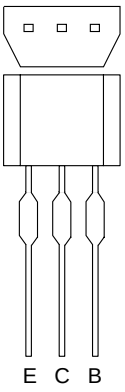
Notes:

Abbreviation for Active Level:

PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

LEAD IDENTIFICATIONS



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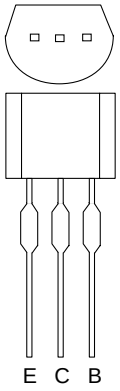
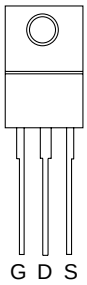
2SC2785(F,H,J,K)
BA1F4M-T
BN1F4M-T
KRA103M
KRC103M
KTA1266(GR)
KTA1267(GR,Y)
KTC3193(Y)
KTC3199(BL,GR,Y)



2SA1015-GR(TPE2)
2SC1815-BL(TPE2)
2SC1815-GR(TPE2)
2SC1815-Y(TPE2)
2SC2120-Y(TPE2)
KTC3198(GR,Y)
KTC3203(Y)

2SK3543



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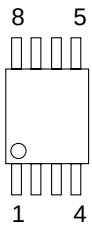
KIA4558P



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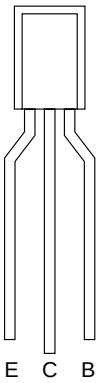

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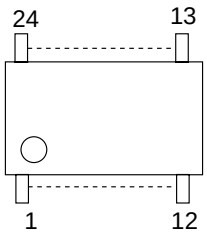

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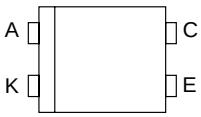
EL817C
LTV-817B-F



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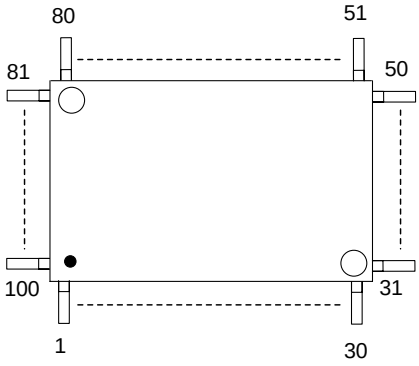

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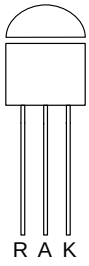
KIA431A-AT
TL431-TA
TL431A-TA



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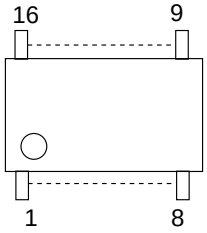

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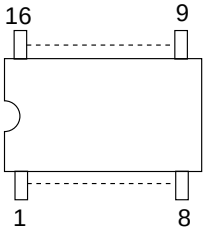

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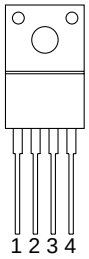

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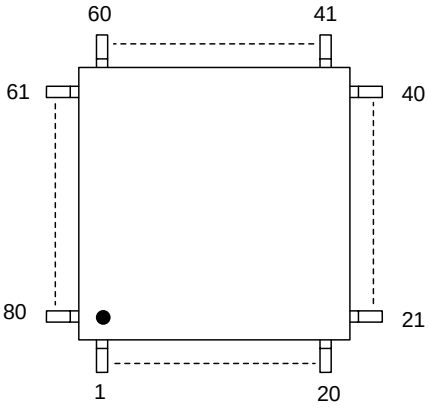

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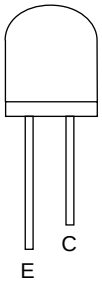
PT204-6B-12



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

DECK MECHANISM SECTION

DVD PLAYER & VIDEO CASSETTE RECORDER

EWD2203/EWD2003

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**

TABLE OF CONTENTS

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ❍: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	❍	●	❍	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	AC Head Assembly			●	
B573,B574	Reel (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
B133,B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm(A) Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder (F)		●		●
B593 (4 head, 4 head HiFi only)	Cam Holder (F) Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% lsopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

   * B73 ------ Recording Model only

Cleaning

Cleaning of Video Head

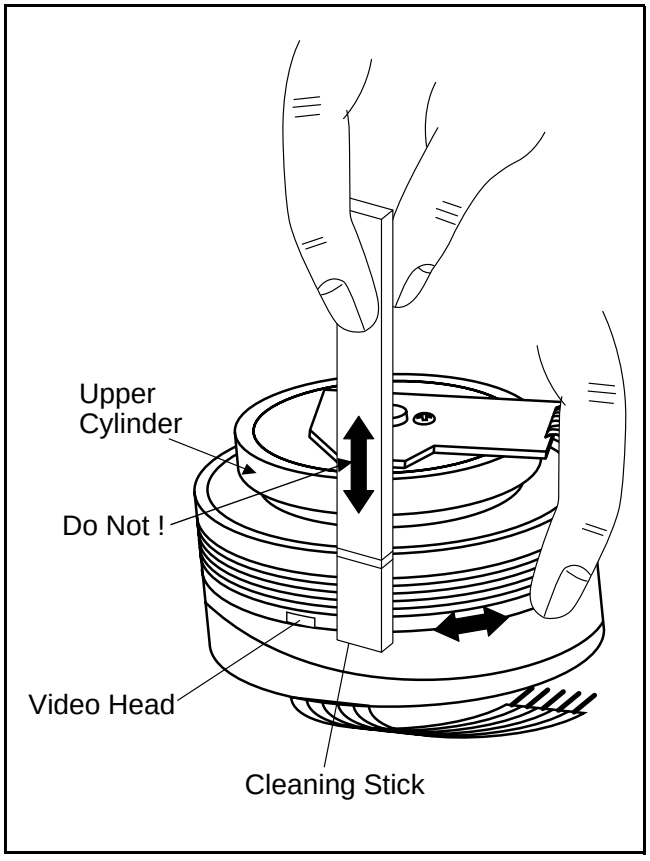
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of Audio Control Head

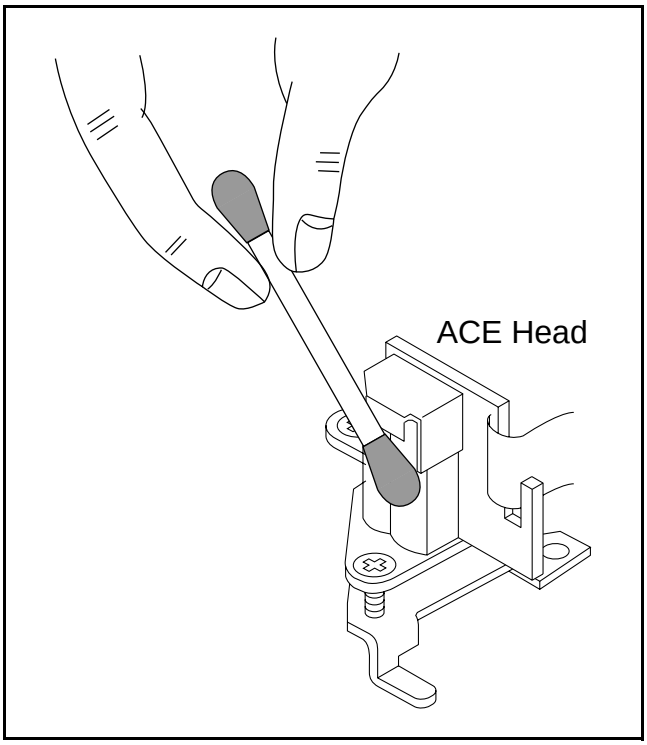
Clean the head with a cotton swab.

Procedure

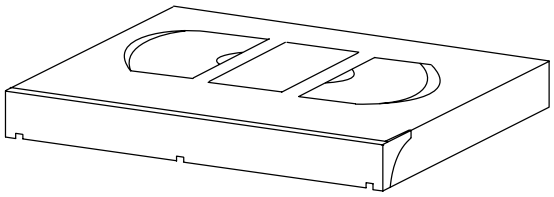
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

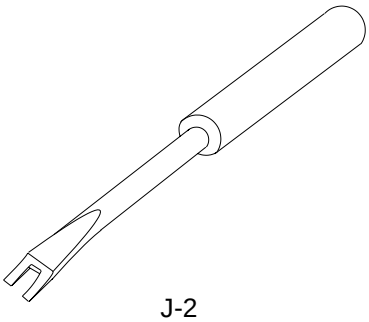
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



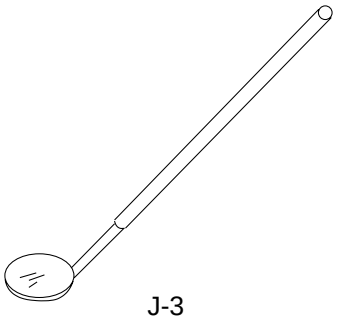
SERVICE FIXTURE AND TOOLS



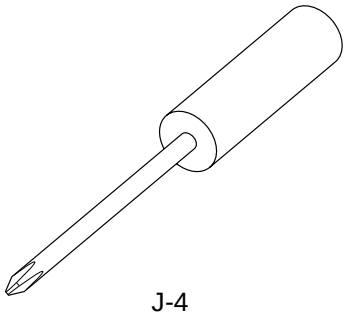
J-1-1, J-1-2



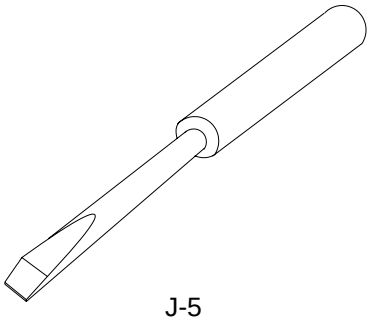
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL8N (2Head only) FL8NW (4Head only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

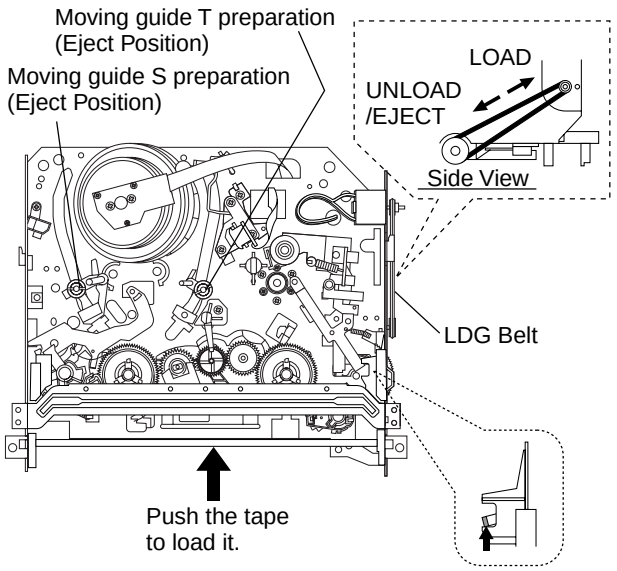


Fig. M1

Bottom View

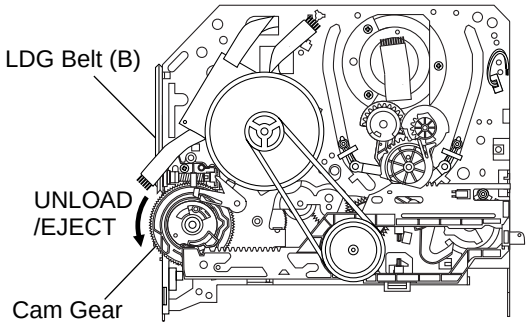


Fig. M2

1.Tape Interchangeability Alignment

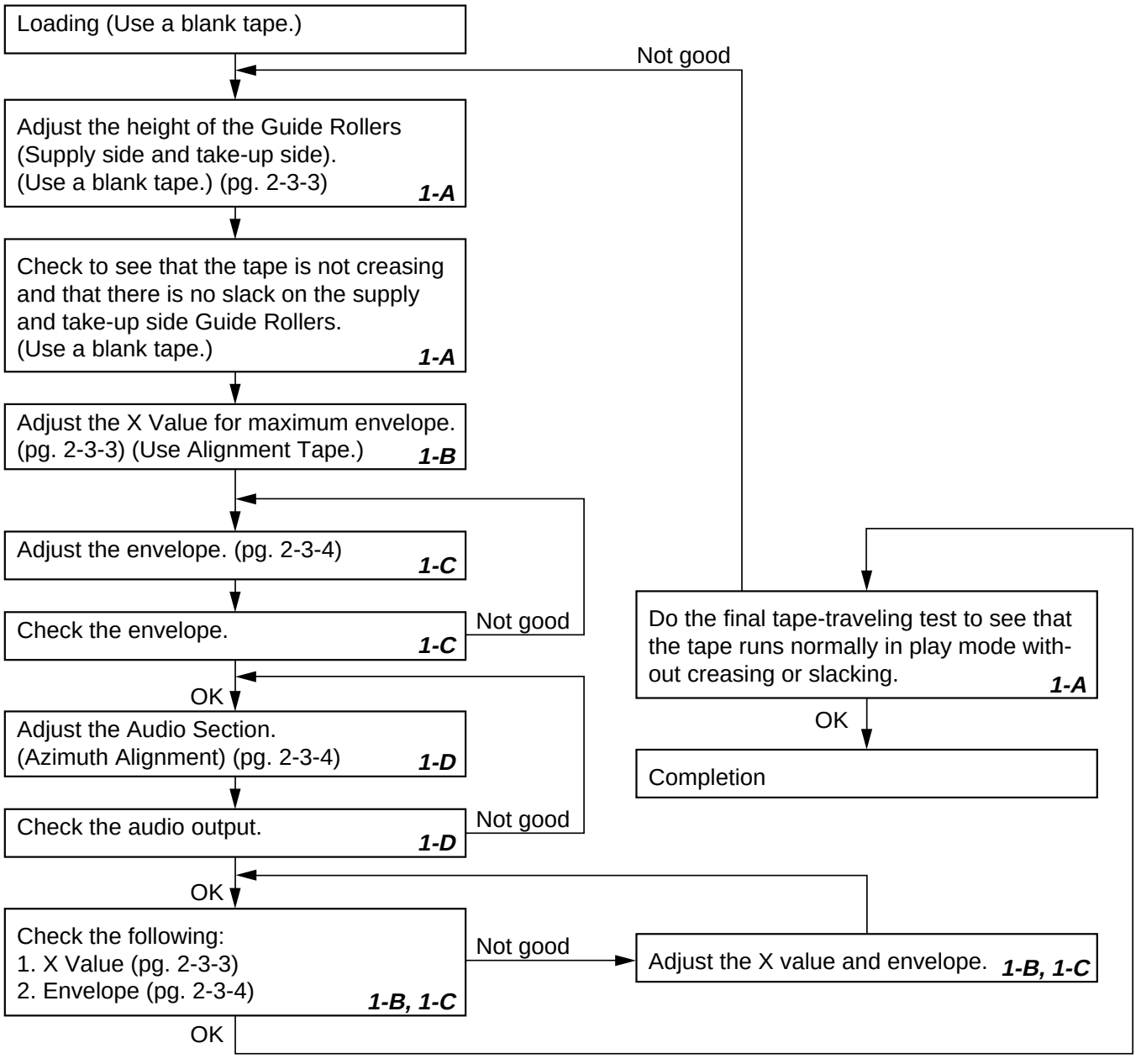
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL8NW)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling



1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

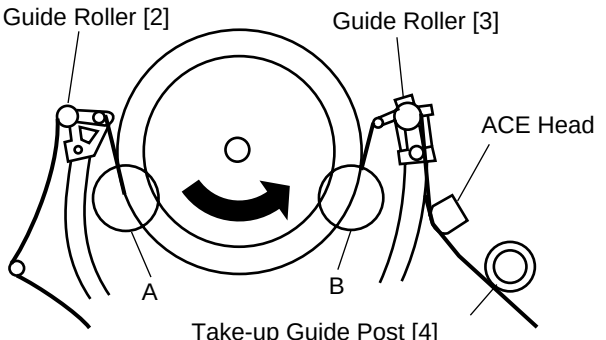


Fig. M3

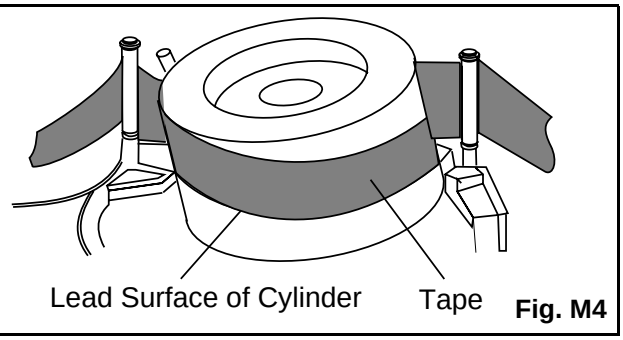


Fig. M4

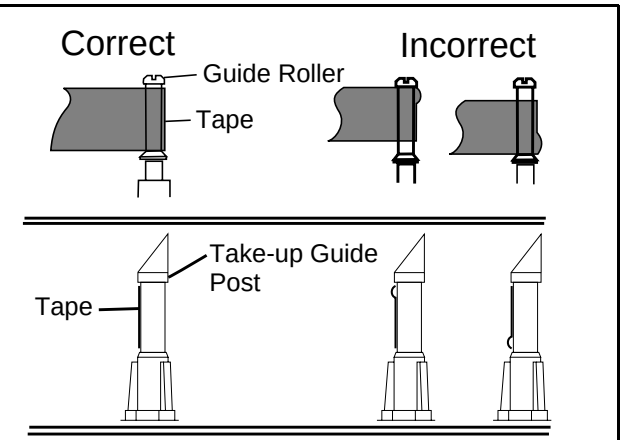


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and AC Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the AC Head. (Fig. M6)

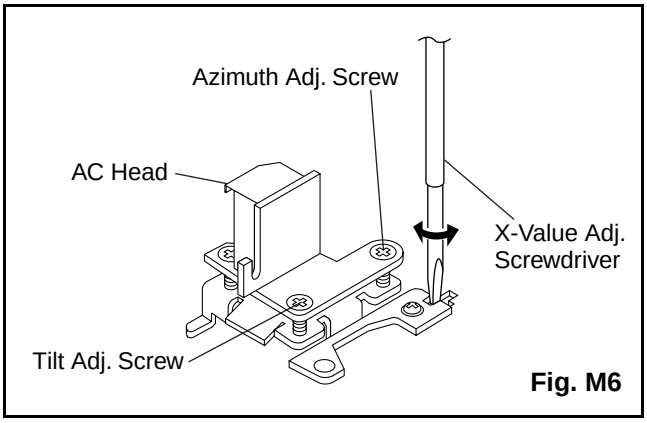


Fig. M6

1-B. X Value Alignment

Purpose:

To align the Horizontal Position of the Audio/Control/Erase Head.

Symptom of Misalignment:

If the Horizontal Position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP513 (CTL) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8NW) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing CH UP button then " PLAY " button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)
5. Press CH UP button on the unit until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press CH DOWN button on the unit until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8NW). Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8NW) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

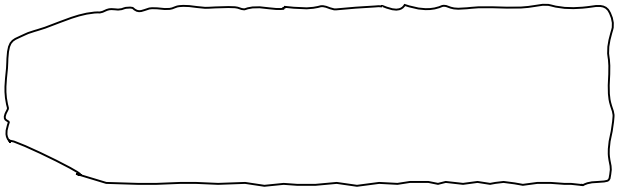


Fig. M7

Dropping envelope level at the end of track.

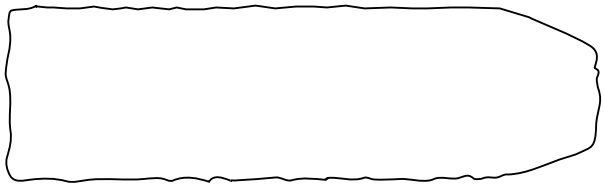


Fig. M8

Envelope is adjusted properly. (No envelope drop)

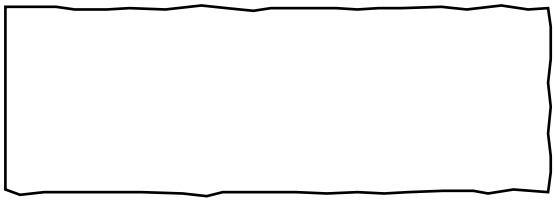


Fig. M9

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-7-1.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig.DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4		
[3]	[2]	Slider (SP)	T	DM5	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3),*(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1,DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1,DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	AC Head Assembly	T	DM1,DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1,DM8	*(P-2)	
[11]	[10]	C Door Opener	T	DM1,DM8	*(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1,DM8	*(P-3)	
[13]	[12]	Pinch Arm Assembly	T	DM1,DM8		
[14]	[14]	FE Head Assembly	T	DM1,DM9	(S-5)	
[15]	[15]	Prism	T	DM1,DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1,DM15		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7),*(P-4)	
[20]	[7],[8], [10]	Capstan Motor	B	DM2,DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2,DM12	(C-1)	
[22]	[22]	Cam Holder (F) Assembly	B	DM2,DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2,DM12	(C-4)*(P-5)	
[24]	[24]	Mode Gear	B	DM2,DM13	(C-2)	
[25]	[21],[23], [24]	Mode Lever	B	DM2,DM13	(C-3), *(L-8)	
[26]	[22]	Worm Holder	B	DM2,DM13	(S-9),*(L-9),*(L-10)	
[27]	[26]	Pulley Assembly	B	DM2,DM13		
[28]	[25],[26]	Cam Gear (A)	B	DM2,DM13		
[29]	[25]	Idler Gear	B	DM1,DM14		
[30]	[29]	Idler Arm	B	DM1,DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2,DM14	*(P-6)	
[32]	[25]	Loading Arm (SP) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[32]	Loading Arm (TU) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9
[34]	[2],[25]	M Brake (TU) Assembly	T	DM1,DM15	*(P-7), Brake Belt	
[35]	[2],[25]	M Brake (SP) Assembly	T	DM1,DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1,DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1,DM15		
[39]	[38]	M Gear	T	DM1,DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1,DM15		
[41]	[32],[36]	Moving Guide S Preparation	T	DM1,DM16		
[42]	[33]	Moving Guide T Preparation	T	DM1,DM16		
[43]	[19]	TG Post Assembly	T	DM1,DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17		(+)Refer to Alignment Sec.Pg.2-4-9
[45]	[44]	F Door Opener	R	DM17		
[46]	[46]	Cleaner Assembly	T	DM1,DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

Top View

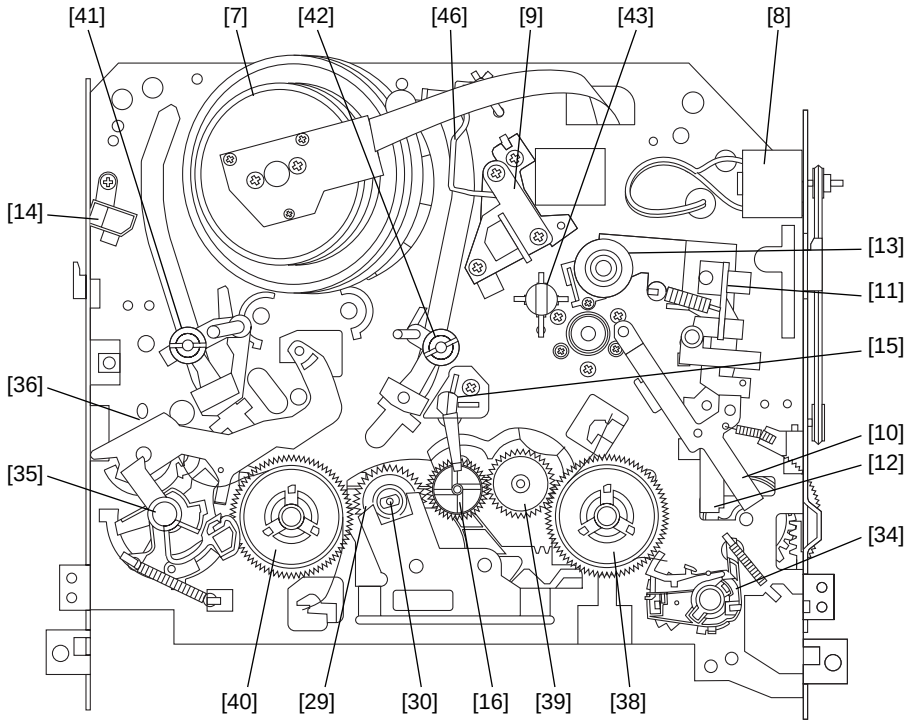


Fig. DM1

Bottom View

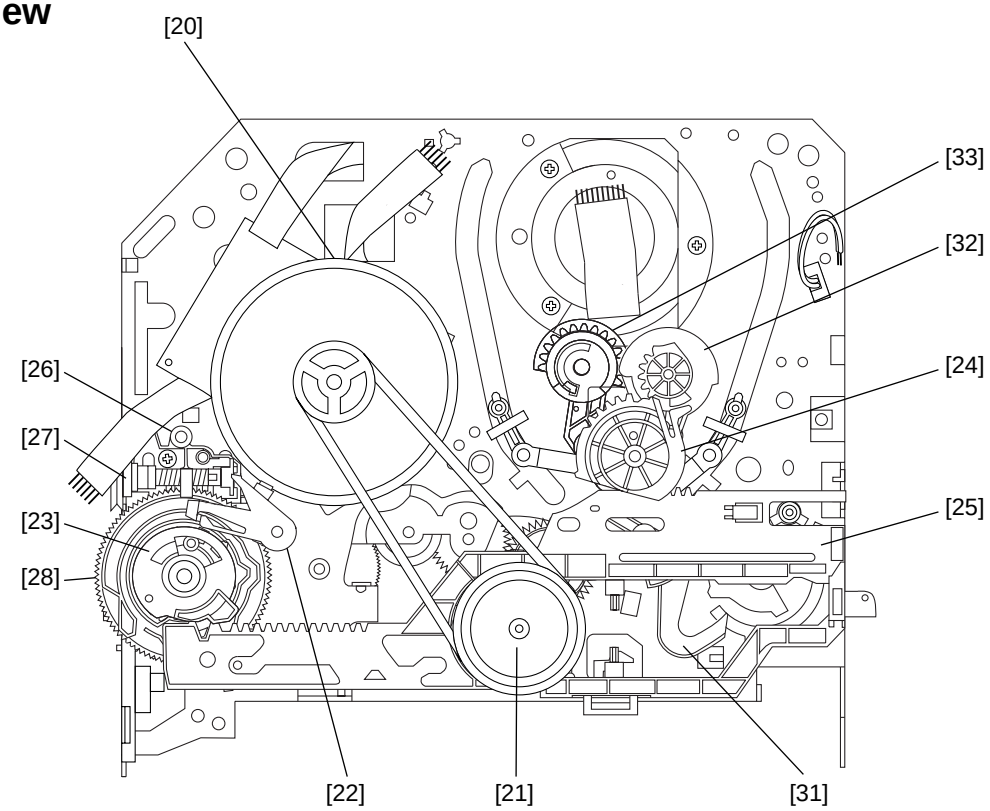


Fig. DM2

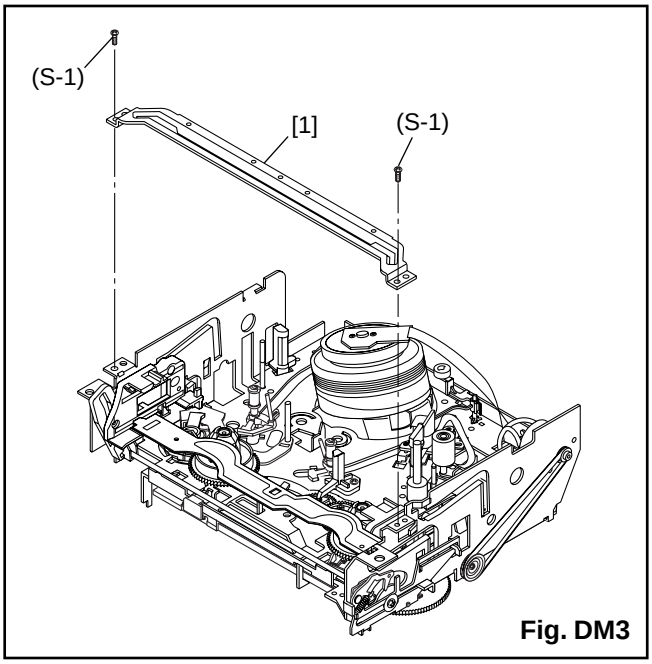


Fig. DM3

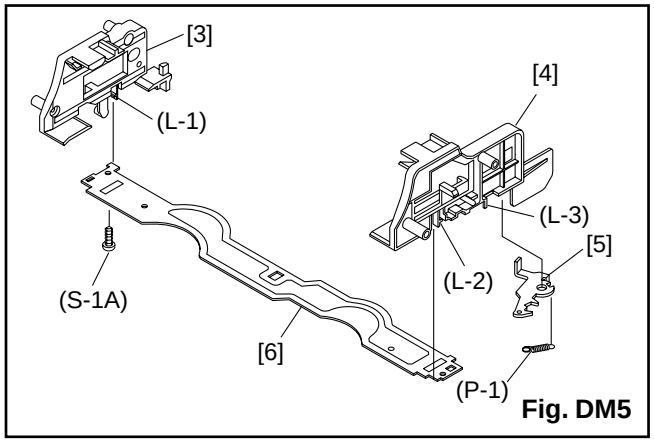


Fig. DM5

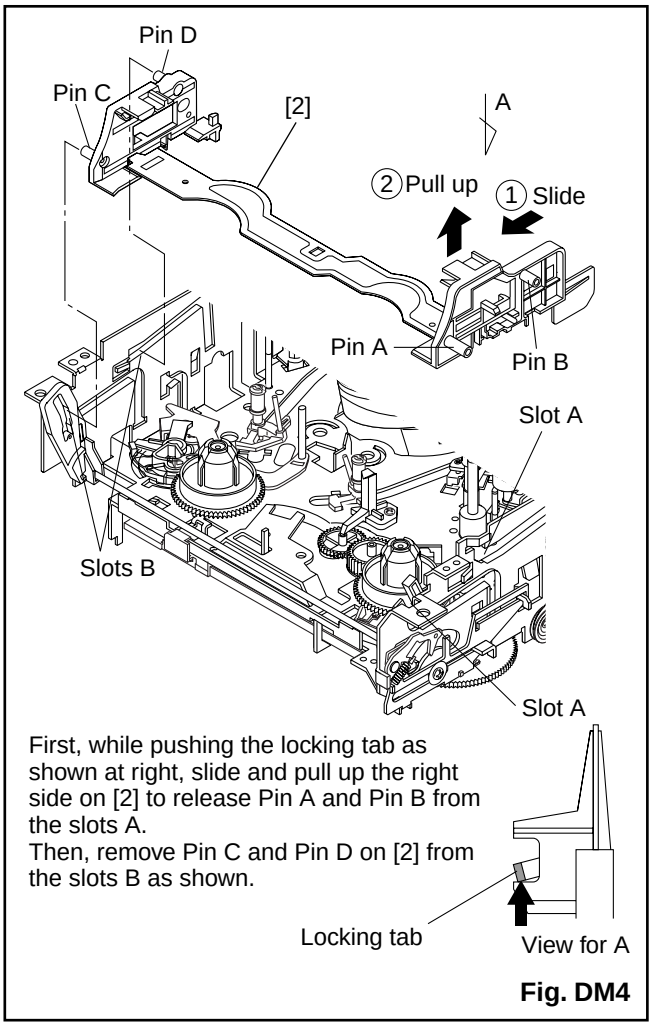


Fig. DM4

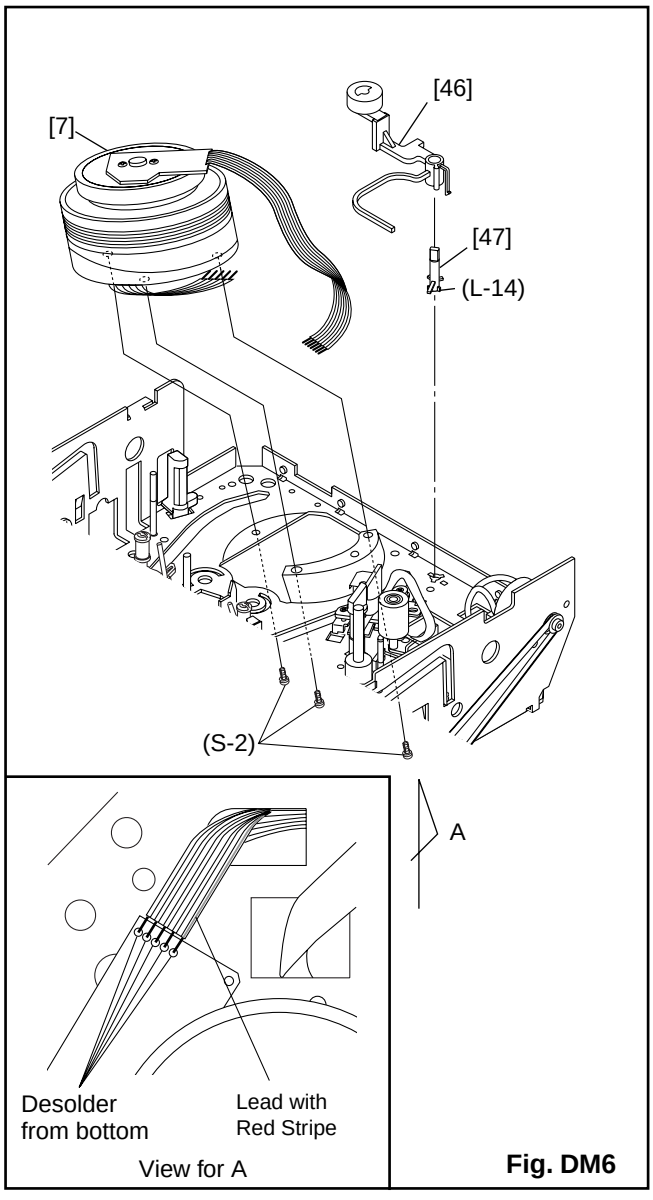


Fig. DM6

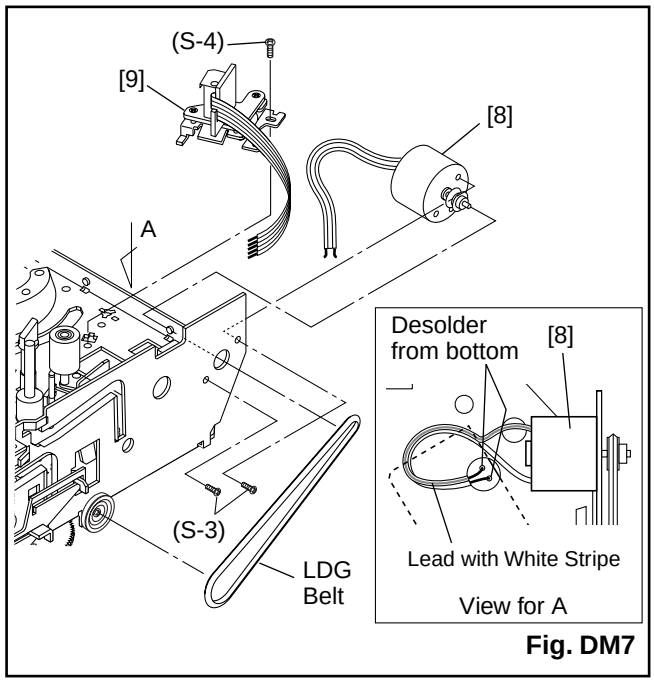


Fig. DM7

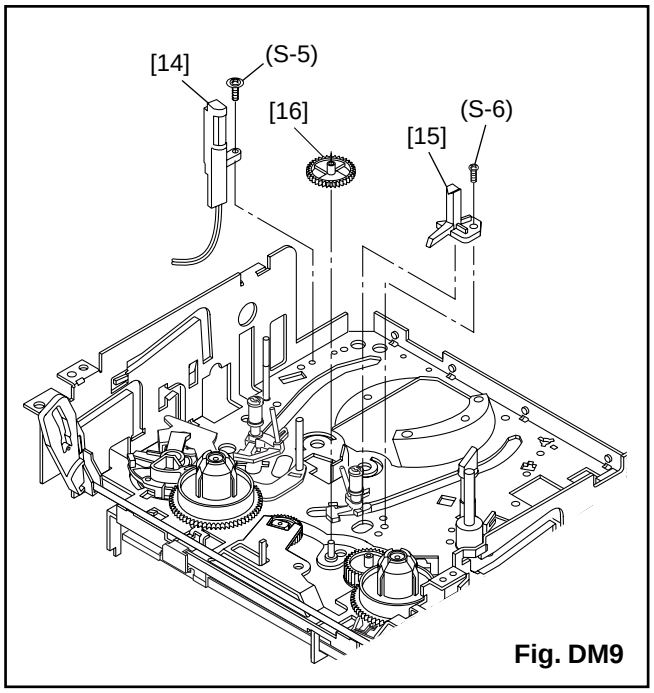


Fig. DM9

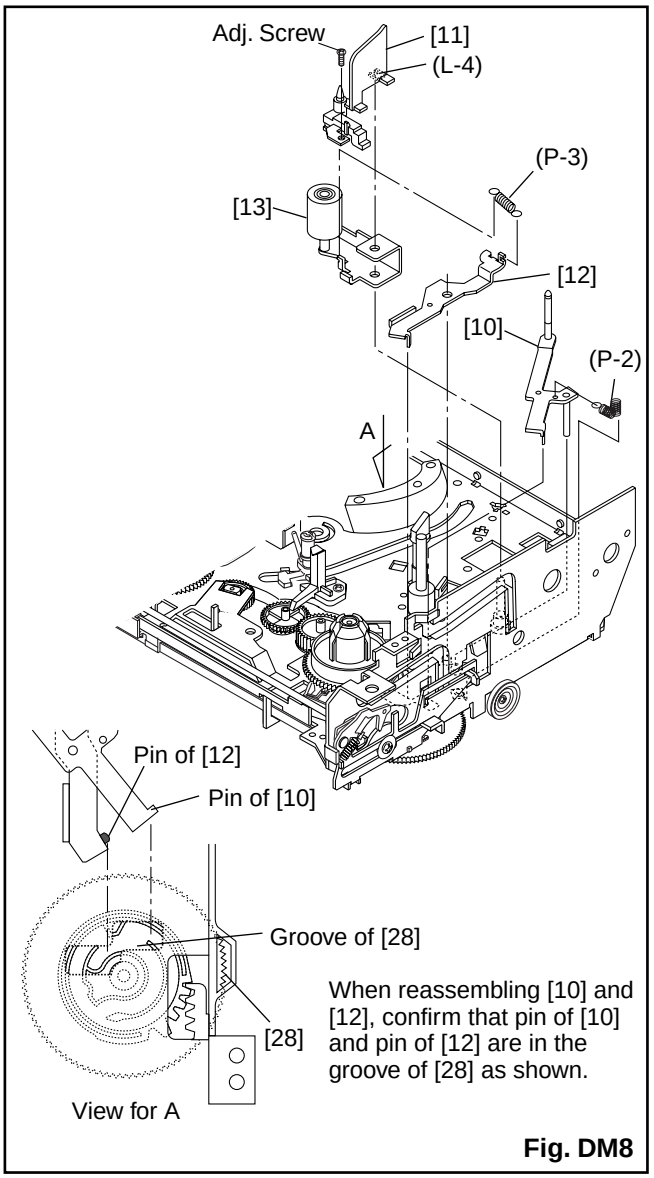


Fig. DM8

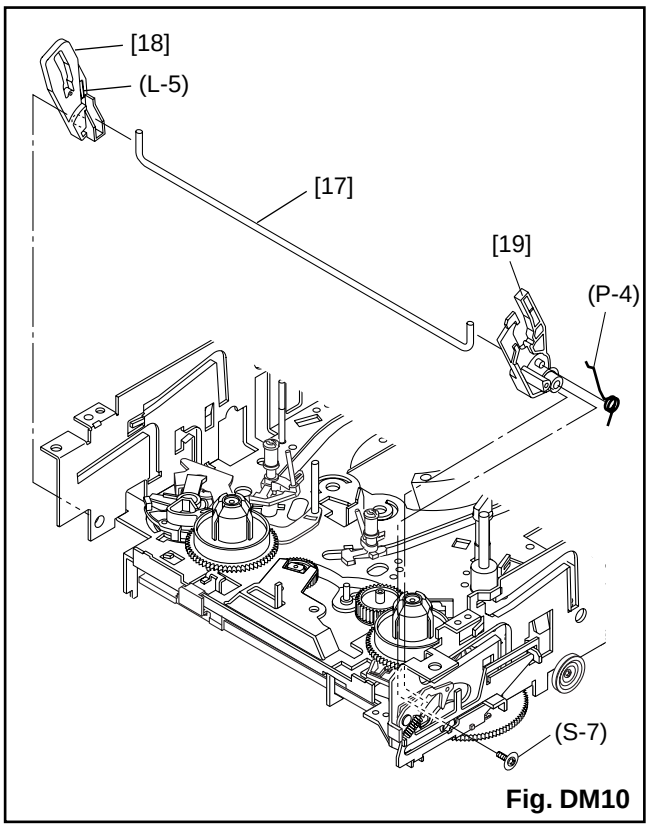


Fig. DM10

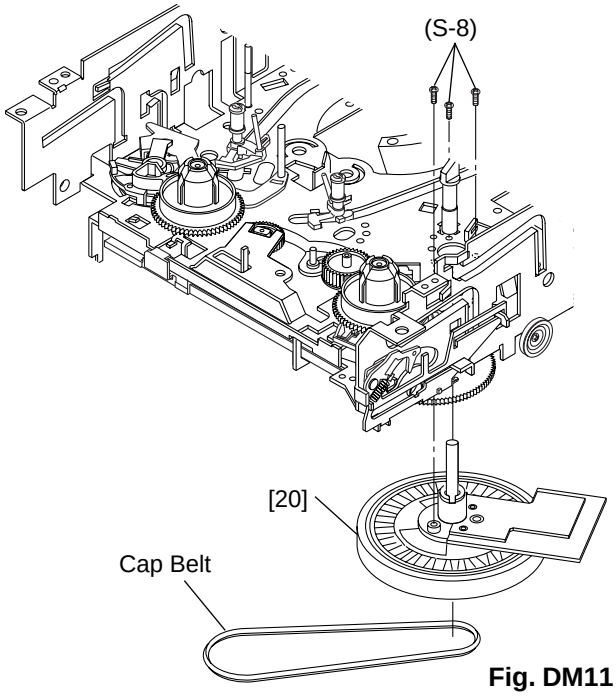
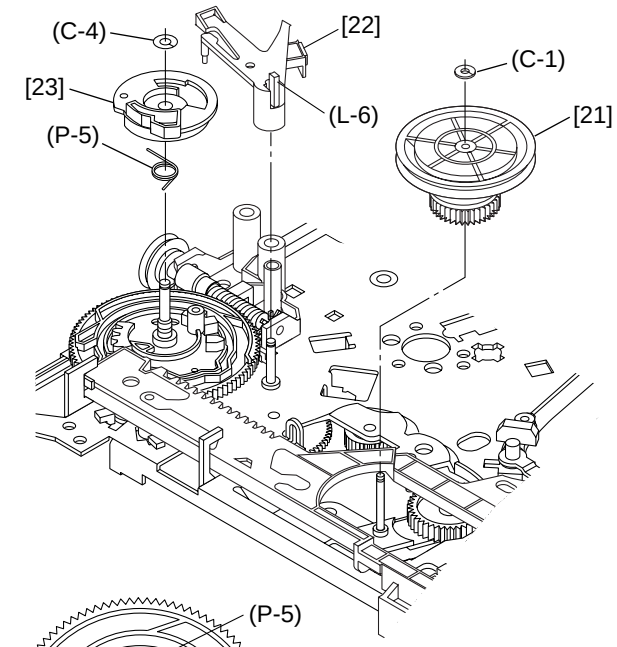
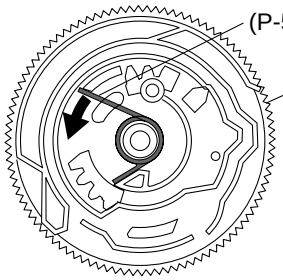
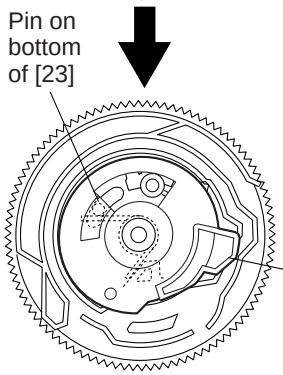


Fig. DM11

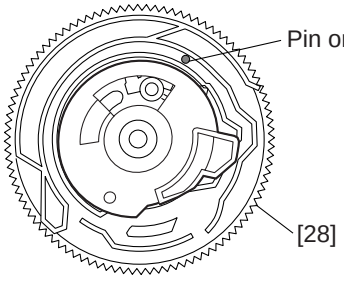




When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.

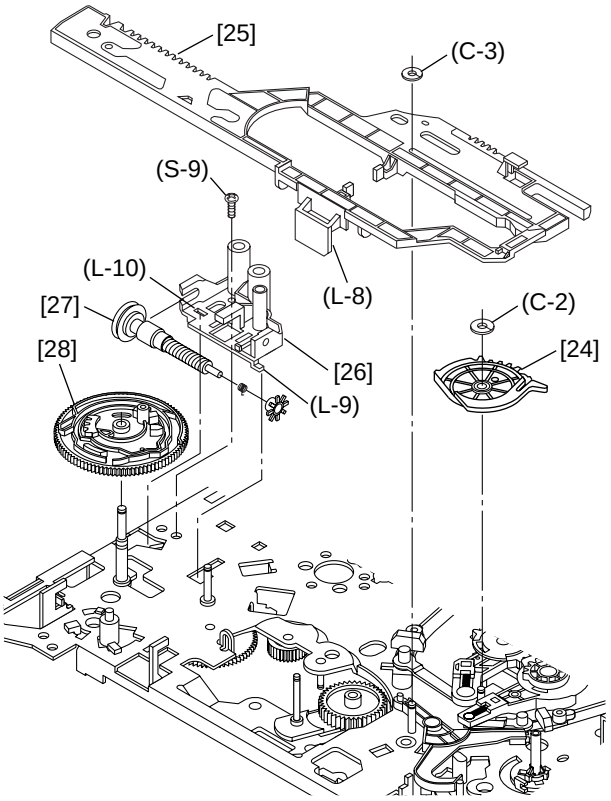


Top View

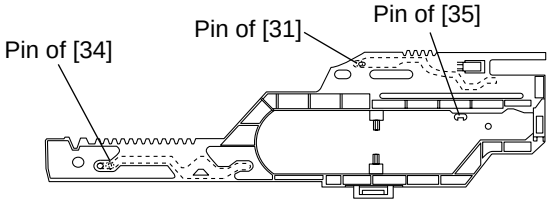


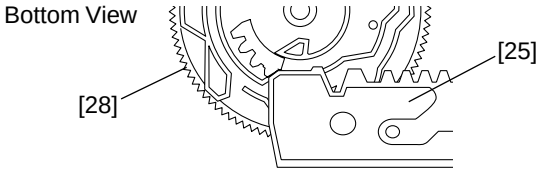
Position of pin on [22]

Fig. DM12

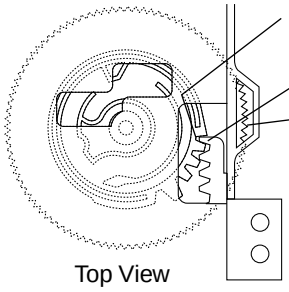


Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

Fig. DM13

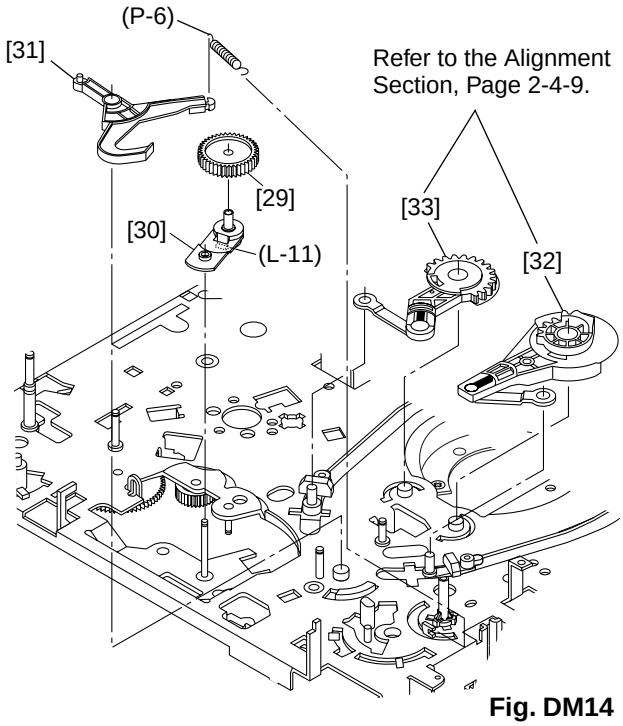


Fig. DM14

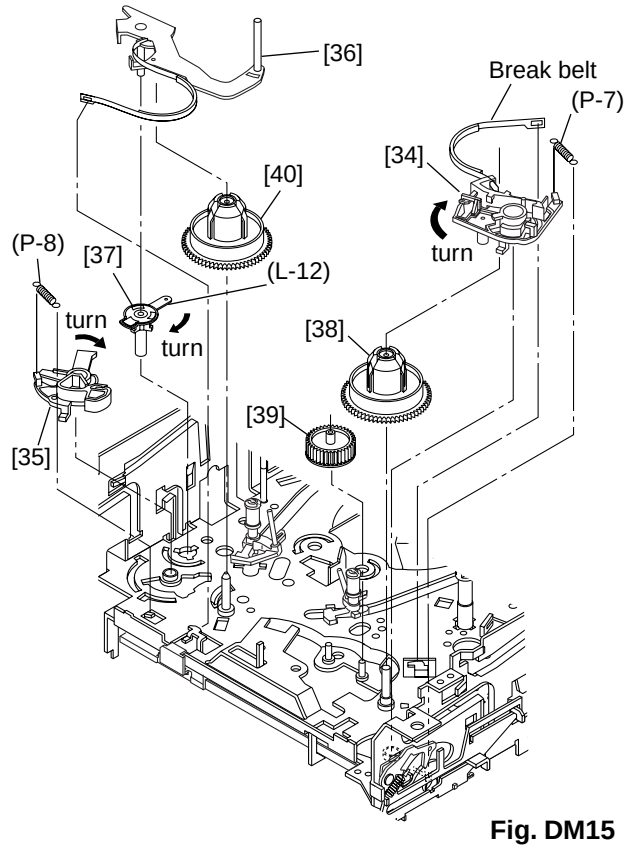


Fig. DM15

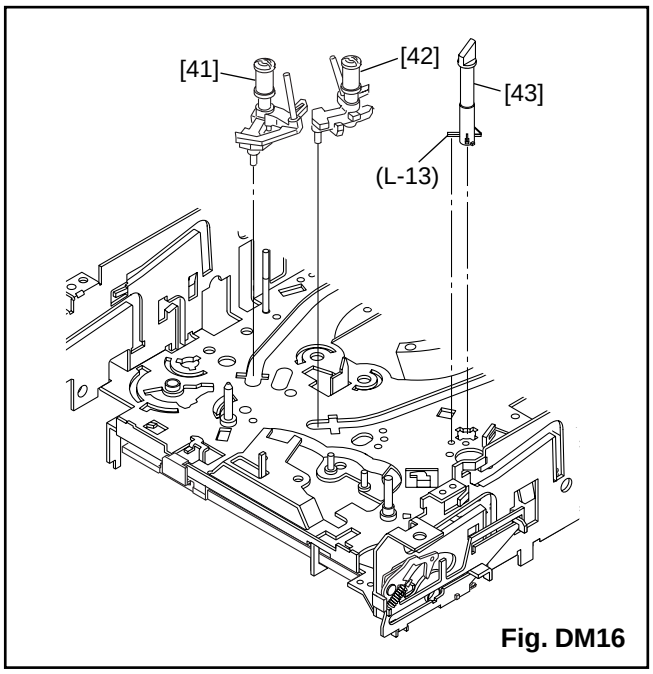


Fig. DM16

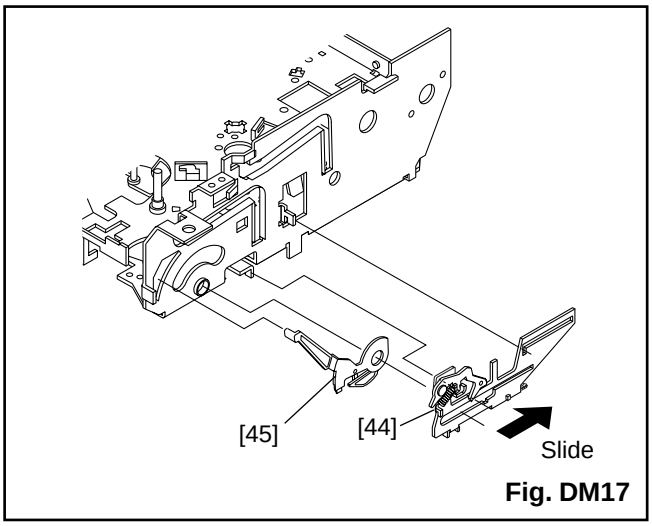


Fig. DM17

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

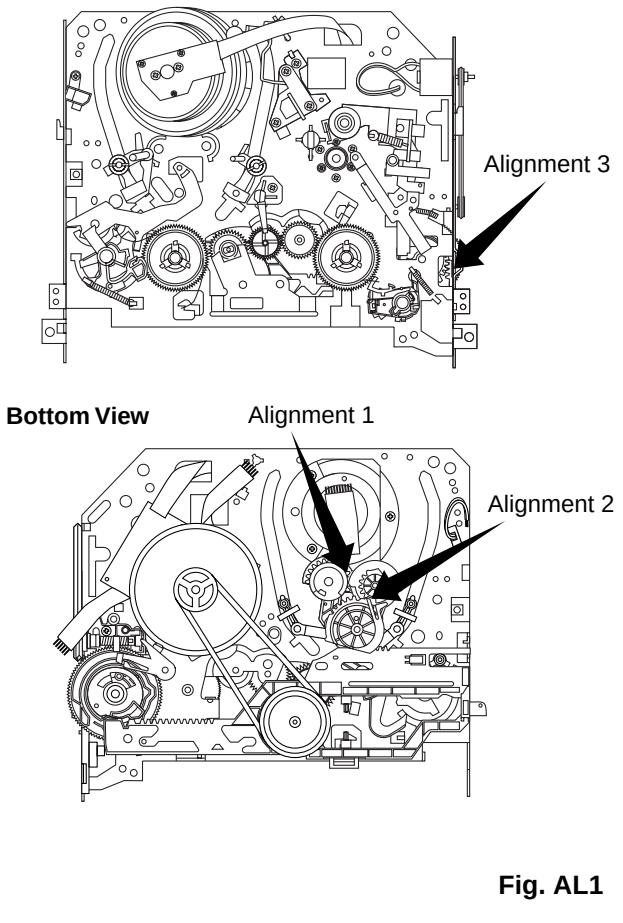


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

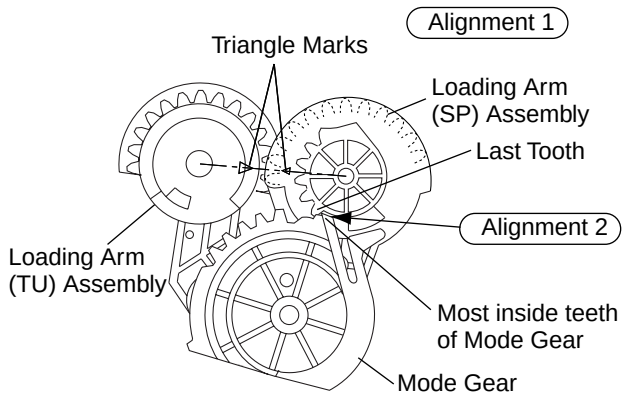


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

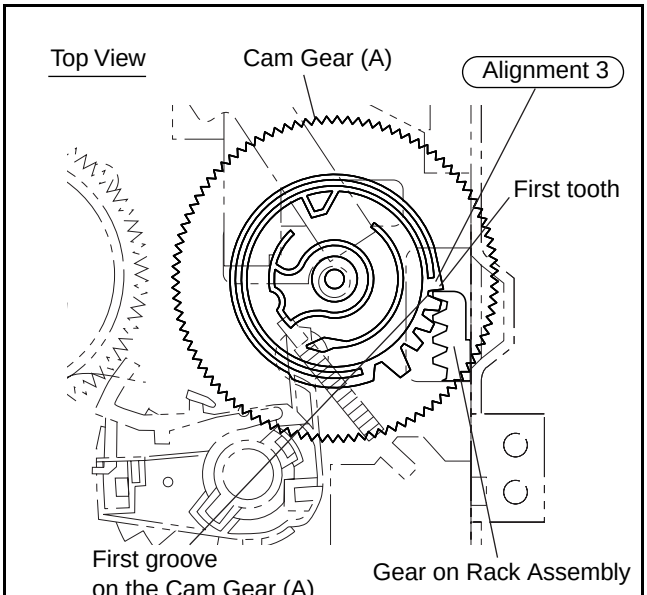


Fig. AL3

EXPLODED VIEWS AND PARTS LIST SECTION

DVD PLAYER & VIDEO CASSETTE RECORDER

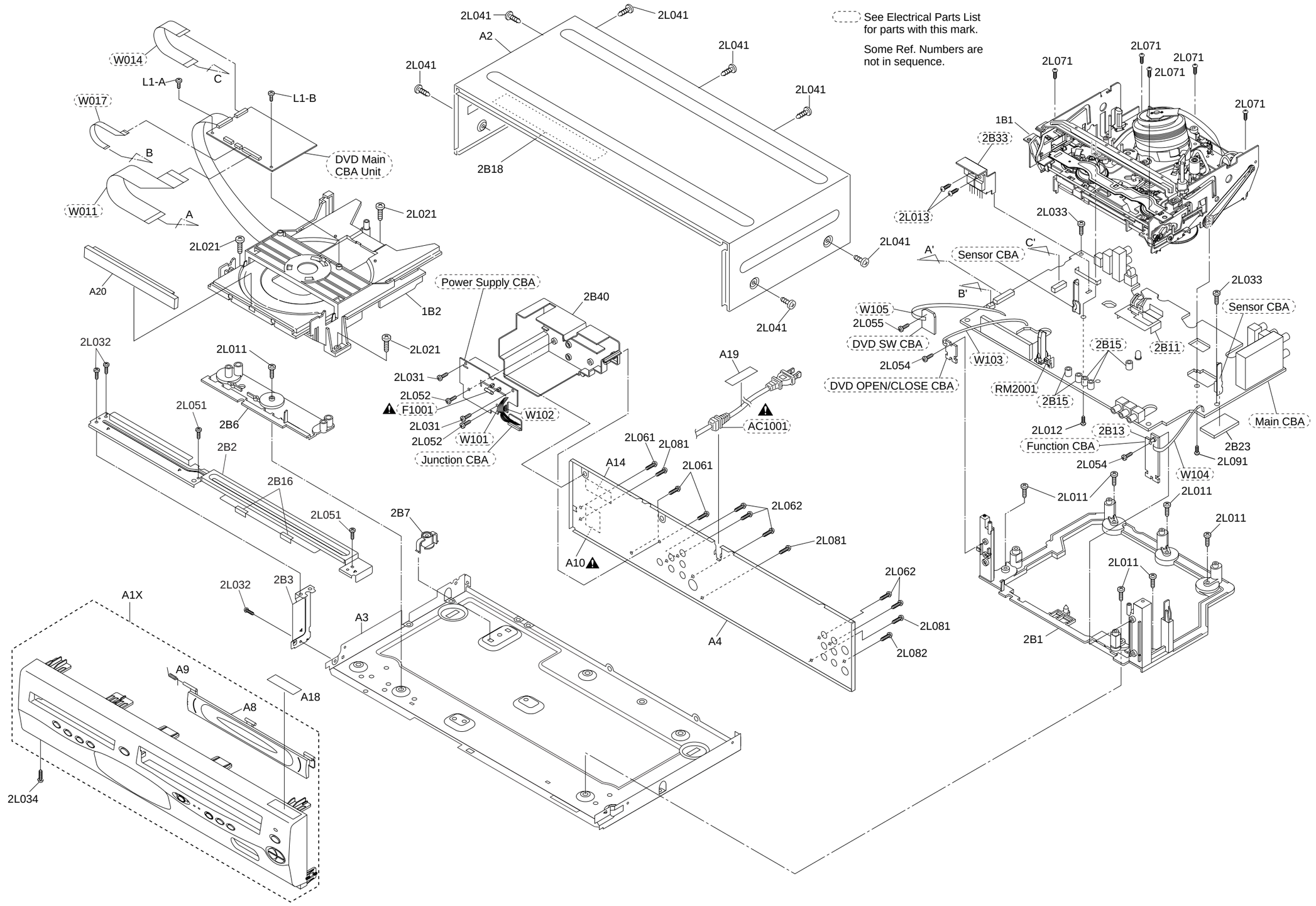
EWD2203/EWD2003

Sec. 3: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

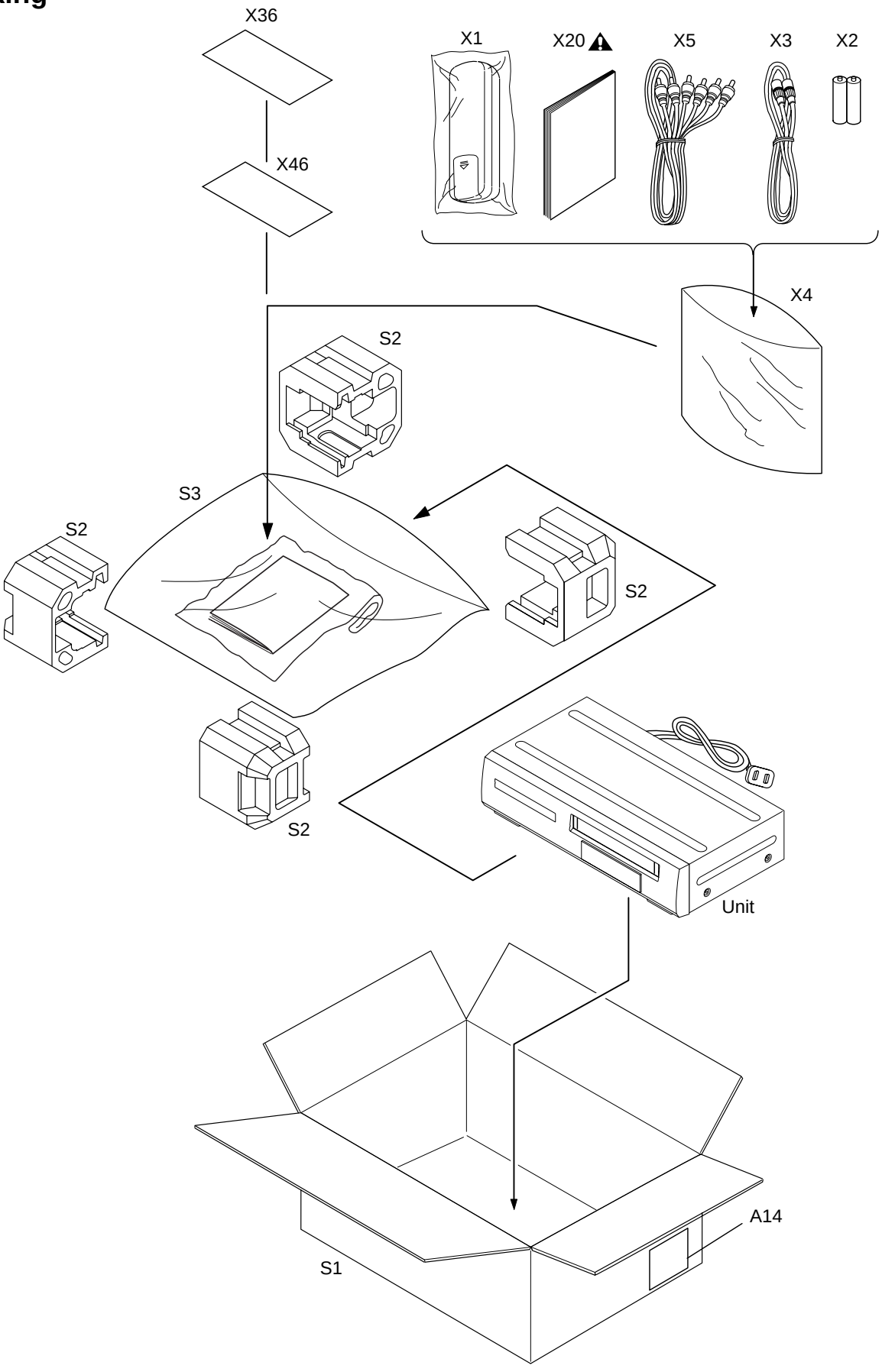
TABLE OF CONTENTS

EXPLODED VIEWS

Cabinet



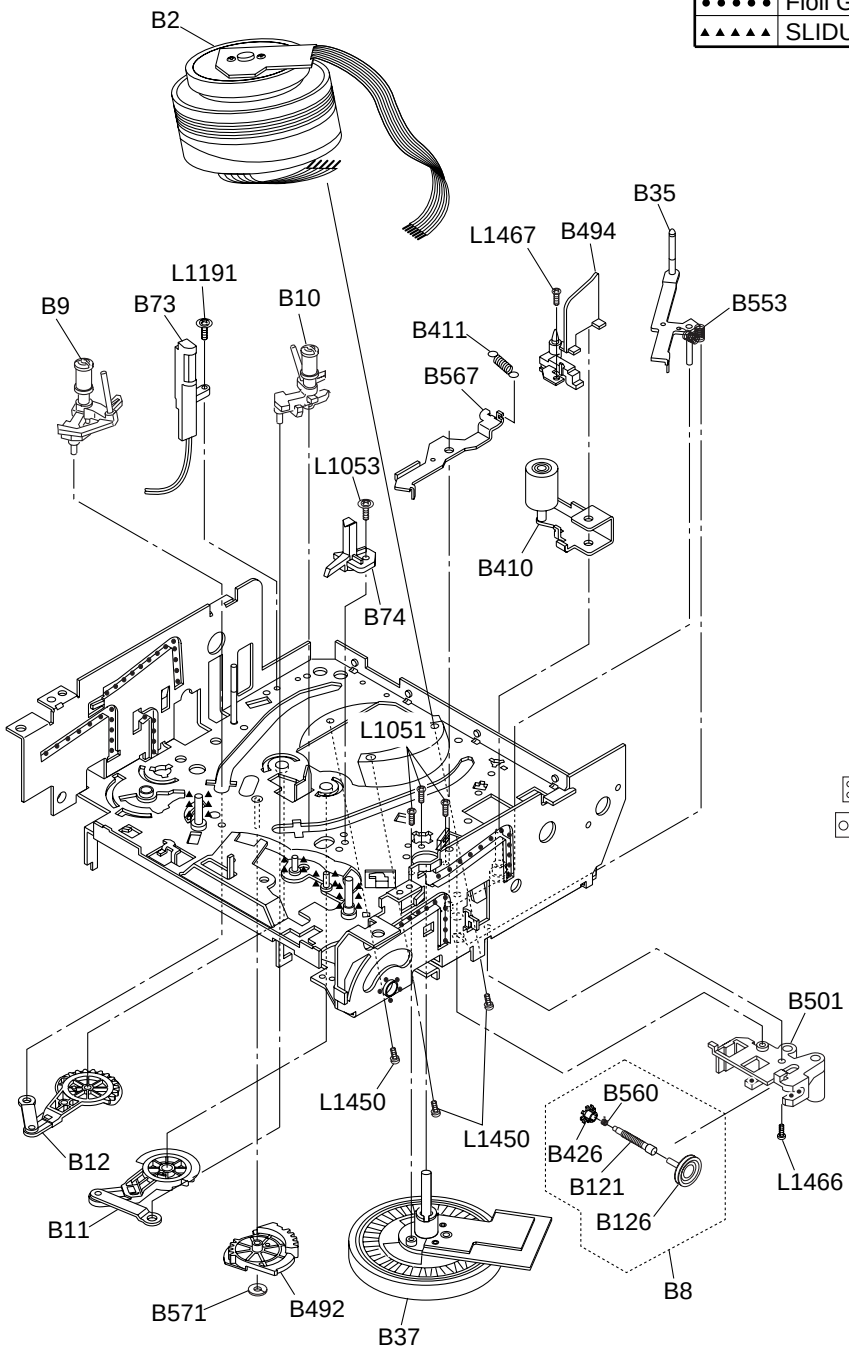
Packing

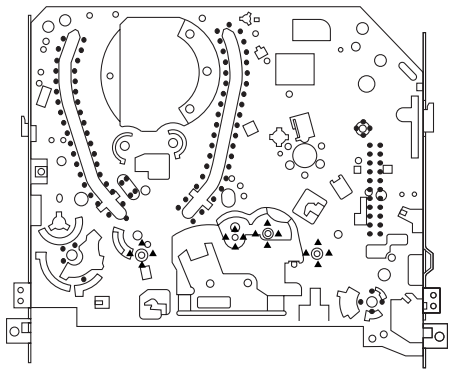


DECK EXPLODED VIEWS

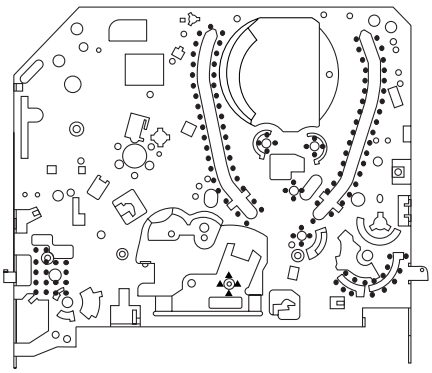
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





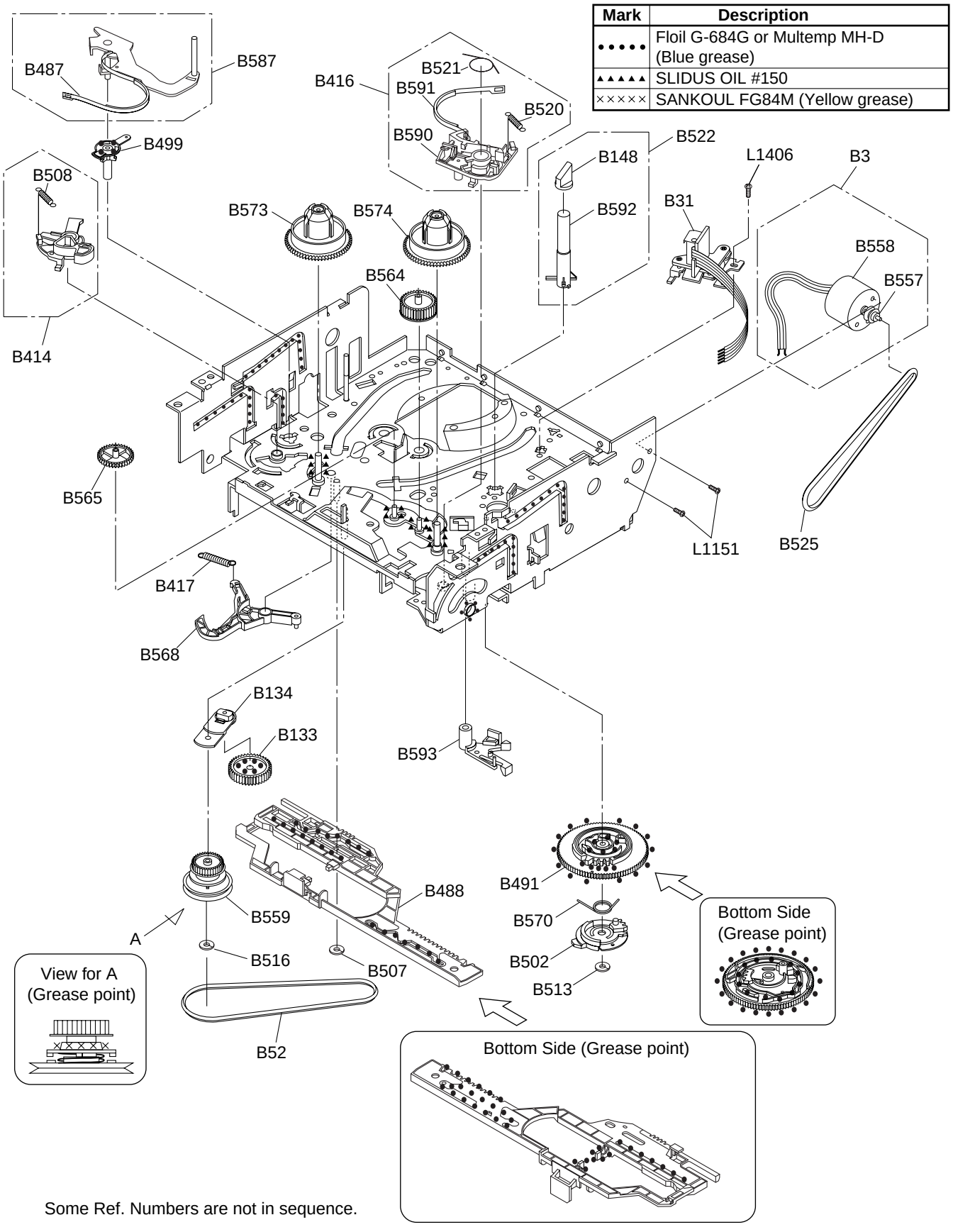
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

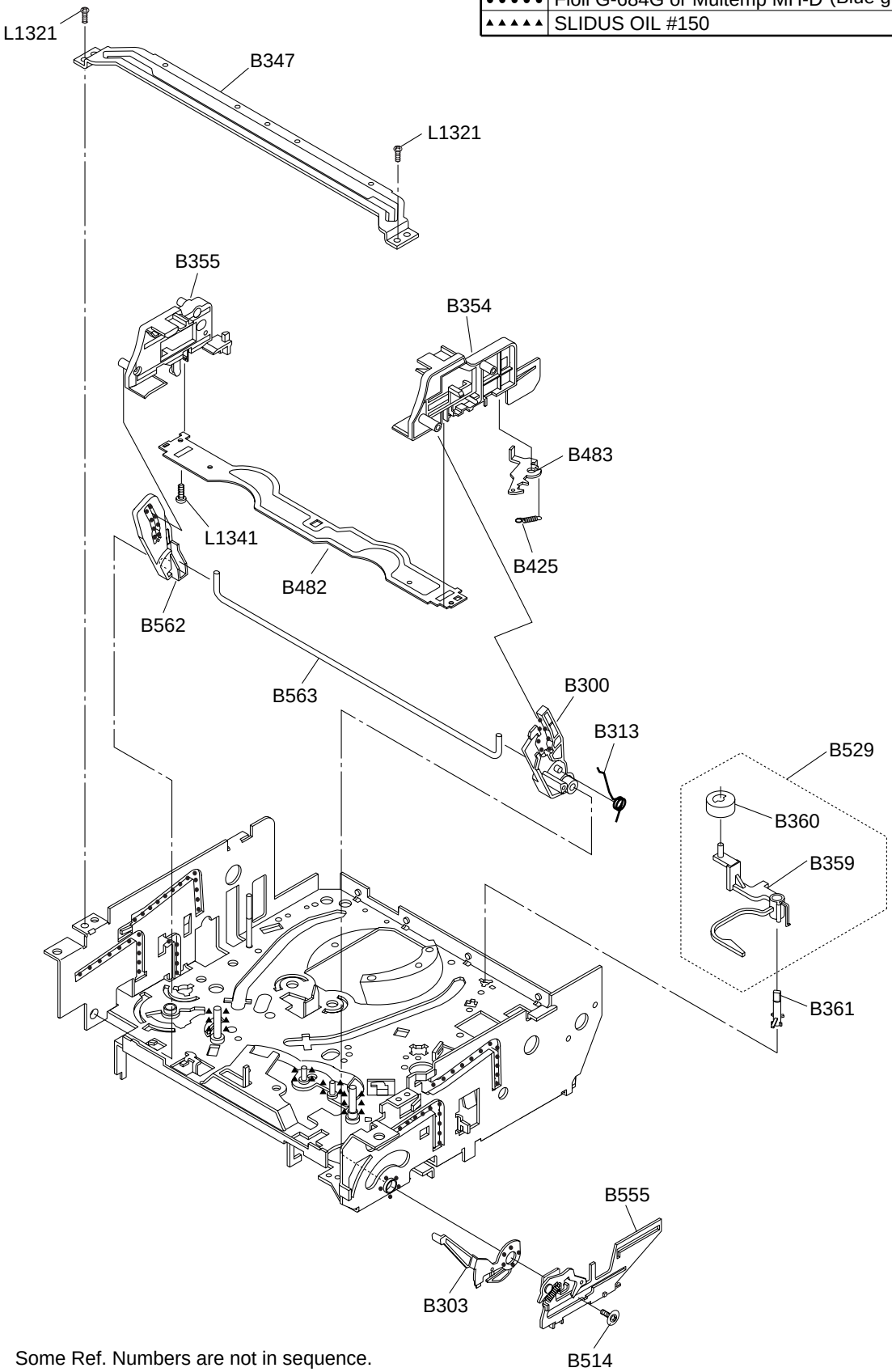
Deck Mechanism View 2



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE:
Parts that are not assigned part numbers (---------) are not available.

Comparison Chart of Models and Marks

Model	Mark
EWD2203	A
EWD2003	B

Ref. No.	Mark	Description	Part No.
A1X	A	FRONT ASSEMBLY H9410UD	0VM204041
A1X	B	FRONT ASSEMBLY H94A4UD	0VM204460
A2		TOP COVER H9400UD	0VM101208
A3		CHASSIS(E4+U27) H9400UD	0VM101207
A4		PANEL, REAR H9410UD	0VM204006
A8	A	DOOR, CASSETTE H9410UD	0VM305940
A8	B	DOOR, CASSETTE H94A4UD	0VM416103
A9		SPRING, DOOR H7220UD U15	0VM408617
A10⚠	A	LABEL, RATING(U) H94X1UD or	---------
⚠	A	LABEL, RATING(D) H94X1UD	---------
A10⚠	B	LABEL, RATING(U) H94X2UD or	---------
⚠	B	LABEL, RATING(D) H94X2UD	---------
A14		LABEL, BAR CODE HB400UD	---------
A14	A	LABEL, BAR CODE H9410UD	---------
A14	B	LABEL, BAR CODE H94A4UD	---------
A18		LABEL, TELEPHONE NUMBER H7931UD(EMERSON)	---------
A19		HOLDER, EAS(H9410UD) MAKER NO.EM150DR	0VM415877
A20	A	PANEL, TRAY H9410UD	0VM101245
A20	B	PANEL, TRAY H94A4UD	0VM416109
1B1		DECK ASSEMBLY CZD012/VM1640	N1640FL
1B2		DVD MECHA 0838 VCDVM040	N79F0GVM
2B1		DECK PEDESTAL-1 H9400UD	0VM101201-1
2B2		TOP BRACKET H9100UD	0VM203252A
2B3		SIDE BRACKET H9100UD	0VM305013
2B6		DECK PEDESTAL-2 H9400UD	0VM101201-2
2B7		DECK PEDESTAL-3 H9400UD	0VM101201-3
2B16		TAPE, HIMELON H9206JD	0VM413956
2B18		FIBER, TOP CASE HC460ED	0VM412906
2B23		M-PCB RUBBER H9400UD	0VM415762
2B40		INSULATOR H9400UD	0VM305872
2L011		SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
2L012		SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
2L021		SCREW, S-TIGHT M3X26 H9400UD	0VM414507
2L031		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L032		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L033		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L034		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L041		SCREW, C-TIGHT M3X5 BIND HEAD +	GBCC3050
2L051		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L052		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L054		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L055		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L061		SCREW, B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L062		SCREW, B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L071		SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L081		SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L082		SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L091		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
		PACKING	
S1	A	GIFT BOX CARTON H9410UD	0VM306061A
S1	B	GIFT BOX CARTON H94A4UD	0VM306665
S2		STYROFOAM(2) H9100UD	0VM203377C
S3		UNIT, BAG E5500UD	0VM411683
		ACCESSORIES	
X1		REMOTE CONTROL UNIT 364/CRC007 or	NA209UD
		REMOTE CONTROL UNIT 364/CRC007	NA259UD
X2		DRY BATTERY R6P/2S or	XB0M451T0001
		DRY BATTERY ES-GR6M-C	XB0M571GLP01
X3		RF CABLE 2.5C-2V	WPZ0901TM002
X4		ACCESSORY BAG H3600UD T=0.03	0VM409454
X5		AV CORD TSCKA-Y/RW100 or	WPZ0102TM015
		AV CORD RCA(M*2)TO RCA(M*2)	WPZ0102LTE01
X20⚠	A	OWNER'S MANUAL H9410UD	0VMN03468
X20⚠	B	OWNER'S MANUAL H94A4UD	0VMN03884
X36		RETURN STOP SHEET H9410UD	0VM414898
X46		DVD RENTAL SHEET H9410UD	0VMN03694

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

3. LED Type :
   When it is necessary to replace one or more of the following diodes, all six should be replaced: D564, D565, D566, D567, D2001 and D2002 on the Main CBA.

DVD MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD MAIN CBA UNIT	N7BFNGUP

MCV CBA

Ref. No.	Description	Part No.
	MCV CBA Consists of the following	0VSA14670
	MAIN CBA (MCV-A) FUNCTION CBA (MCV-B) DVD OPEN/CLOSE CBA(MCV-C) DVD SW CBA(MCV-D) SENSOR CBA	---------- ---------- ---------- ---------- 0VSA13627

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA(MCV-A) Consists of the following	---------
	CAPACITORS	
C023	ELECTROLYTIC CAP. 100µF/25V M or	CE1EMASDL101
	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASTL101
C051	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C053	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C060	CERAMIC CAP.(AX) B K 0.1µF/25V	CCA1EKT0B104
C253	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C255	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C256	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C257	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C308	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C309	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C310	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C311	CHIP CERAMIC CAP. CH J 390pF/50V or	CHD1JJBCH391
	CHIP CERAMIC CAP. CH J 390pF/50V or	CHD1JJ3CH391
	CHIP CERAMIC CAP. CG J 390pF/50V	CHD1JJ3CG391
C312	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C314	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C315	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C320	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C321	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C322	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C324	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C325	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C326	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C329	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C330	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C332	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C333	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C335	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C336	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C337	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C339	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C340	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C341	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C344	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C345	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C346	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C347	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C348	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C349	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473

Ref. No.	Description	Part No.
C352	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C353	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C354	CHIP CERAMIC CAP. CH J 68pF/50V or	CHD1JJBCH680
	CHIP CERAMIC CAP. CH J 68pF/50V or	CHD1JJ3CH680
	CHIP CERAMIC CAP. CG J 68pF/50V	CHD1JJ3CG680
C391	ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C392	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C401	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C402	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C403	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C404	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C405	ELECTROLYTIC CAP. 33µF/6.3V M H7	CE0KMAVSL330
C406	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C408	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C409	CHIP CERAMIC CAP.(MELF) Y K 4700pF/16V or	CZM1CKB0Y472
	CHIP CERAMIC CAP.(MELF) Y K 4700pF/16V	CZM1CK30Y472
C410	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C411	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C413	CHIP CERAMIC CAP. B K 0.012µF/50V or	CHD1JKB0B123
	CHIP CERAMIC CAP. B K 0.012µF/50V	CHD1JK30B123
C415	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C417	CHIP CERAMIC CAP.(MELF) Y K 1000pF/35V or	CZM1GKB0Y102
	CHIP CERAMIC CAP.(MELF) Y K 1000pF/35V	CZM1GK30Y102
C418	CHIP CERAMIC CAP. B K 2700pF/50V or	CHD1JKB0B272
	CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JK30B272
C419	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C421	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C422	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C423	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C424	CERAMIC CAP. B K 470pF/100V	CCD2AKS0B471
C425	FILM CAP.(P) 0.018µF/100V J or	CMA2AJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
C502	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C505	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C507	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C508	CHIP CERAMIC CAP. B K 0.022µF/50V or	CHD1JKB0B223
	CHIP CERAMIC CAP. B K 0.022µF/25V or	CHD1EKB0B223

Ref. No.	Description	Part No.
	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V or	CHD1JK30B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/25V	CHD1EK30B223
C509	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C513	CHIP CERAMIC CAP.(MELF) SL D 10pF/50V or	CZM1JDBSL100
	CHIP CERAMIC CAP.(MELF) SL D 10pF/50V or	CZM1JD3SL100
	CHIP CERAMIC CAP. CH D 10pF/50V or	CHD1JDBCH100
	CHIP CERAMIC CAP. CH D 10pF/50V or	CHD1JD3CH100
	CHIP CERAMIC CAP. CG D 10pF/50V	CHD1JD3CG100
C514	CHIP CERAMIC CAP.(MELF) SL J 22pF/50V or	CZM1JJBSL220
	CHIP CERAMIC CAP.(MELF) SL J 22pF/50V or	CZM1JJ3SL220
	CHIP CERAMIC CAP. CH J 22pF/50V or	CHD1JJBCH220
	CHIP CERAMIC CAP.(1608) CH J 22pF/50V or	CHD1JJ3CH220
	CHIP CERAMIC CAP. CG J 22pF/50V	CHD1JJ3CG220
C515	CHIP CERAMIC CAP.(MELF) SL J 18pF/50V or	CZM1JJBSL180
	CHIP CERAMIC CAP.(MELF) SL J 18pF/50V or	CZM1JJ3SL180
	CHIP CERAMIC CAP. CH J 18pF/50V or	CHD1JJBCH180
	CHIP CERAMIC CAP. CH J 18pF/50V or	CHD1JJ3CH180
	CHIP CERAMIC CAP. CG J 18pF/50V	CHD1JJ3CG180
C521	ELECTROLYTIC CAP. 47µF/25V M H7	CE1EMAVSL470
C522	CHIP CERAMIC CAP. B K 4700pF/50V or	CHD1JKB0B472
	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C523	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C525	CHIP CERAMIC CAP. B K 4700pF/50V or	CHD1JKB0B472
	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C527	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C529	CHIP CERAMIC CAP. B K 0.022µF/50V or	CHD1JKB0B223
	CHIP CERAMIC CAP. B K 0.022µF/25V or	CHD1EKB0B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V or	CHD1JK30B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/25V	CHD1EK30B223
C530	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C531	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C532	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C533	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C534	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C535	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C536	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C537	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C540	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C701	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C702	CHIP CERAMIC CAP. B K 2200pF/50V or	CHD1JKB0B222
	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C703	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C704	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C707	FILM CAP.(P) 0.039µF/50V J or	CMA1JJS00393
	FILM CAP.(P) 0.039µF/50V J	CA1J393MS029

Ref. No.	Description	Part No.
C708	ELECTROLYTIC CAP. 0.22µF/50V M or	CE1JMASDLR22
	ELECTROLYTIC CAP. 0.22µF/50V M	CE1JMASTLR22
C709	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C751	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C752	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C762	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C766	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C772	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C773	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C777	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C780	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C781	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C1015	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C1038	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1039	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1040	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C1042	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1070	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1071	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1201	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1202	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1205	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJBCH221
	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJ3CH221
	CHIP CERAMIC CAP. CG J 220pF/50V	CHD1JJ3CG221
C1206	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJBCH221
	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJ3CH221
	CHIP CERAMIC CAP. CG J 220pF/50V	CHD1JJ3CG221
C1207	CHIP CERAMIC CAP. CH J 47pF/50V or	CHD1JJBCH470
	CHIP CERAMIC CAP.(1608) CH J 47pF/50V or	CHD1JJ3CH470
	CHIP CERAMIC CAP. CG J 47pF/50V	CHD1JJ3CG470
C1208	CHIP CERAMIC CAP. CH J 47pF/50V or	CHD1JJBCH470
	CHIP CERAMIC CAP.(1608) CH J 47pF/50V or	CHD1JJ3CH470
	CHIP CERAMIC CAP. CG J 47pF/50V	CHD1JJ3CG470
C1221	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1222	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1223	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C1224	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C1245	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1246	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1247	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1249	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C1350	CHIP CERAMIC CAP. B K 0.47µF/10V or	CHD1AKB0B474
	CHIP CERAMIC CAP.(1608) B K 0.47µF/10V	CHD1AK30B474
C1351	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C1353	CHIP CERAMIC CAP. B K 0.47µF/10V or	CHD1AKB0B474
	CHIP CERAMIC CAP.(1608) B K 0.47µF/10V	CHD1AK30B474
C1354	CHIP CERAMIC CAP. CH J 100pF/50V or	CHD1JJBCH101
	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C1355	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
C1358	CHIP CERAMIC CAP. CH D 9pF/50V or	CHD1JDBCH9R0
	CHIP CERAMIC CAP. CH D 9pF/50V	CHD1JD3CH9R0
C1394	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMASSL470
C1395	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1402	PCB JUMPER D0.6-P5.0	JW5.0T
C1421	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1422	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C1441	CHIP CERAMIC CAP. B K 0.33µF/10V or	CHD1AKB0B334
	CHIP CERAMIC CAP.(1608) B K 0.33µF/10V	CHD1AK30B334
C1442	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1461	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1462	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1481	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1482	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1523	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1524	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C1531	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1532	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C2002	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C2004	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C2012	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
CONNECTORS		
CN1001	FMN CONNECTOR, SIDE 22P 22FMN-STRK or	JCFNG22JG004
	FPC/FFC CONNECTOR, 22P HLW22R-2C7	JCHWJ22JE001
CN1003	CONNECTOR BASE, 15P TUC-P15P-B1	J3TUA15TG001

Ref. No.	Description	Part No.
CN1601	FMN CONNECTOR, TOP 16P 16FMN-BTK	JCFNG16JG001
CN2001	FMN CONNECTOR, TOP 4P 04FMN-BTRK	JCFNG04JG002
	DIODES	
D019	RECTIFIER DIODE RL201	NDQZ000RL201
D052	ZENER DIODE DZ-10BSBT265 or	NDTB00DZ10BS
	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D071	PCB JUMPER D0.6-P7.5	JW7.5T
D080	RECTIFIER DIODE 1N4005	NDQZ001N4005
D081	RECTIFIER DIODE 1N4005	NDQZ001N4005
D100	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D101	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D501	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D555	LED MIE-534A2 or	NPZZM1E534A2
	LED SIR-563ST3F P or	QPQPS1R563ST
	LED SIR-563ST3F Q	QPQQS1R563ST
D701	ZENER DIODE DZ-33BSDT265 or	NDTD00DZ33BS
	ZENER DIODE MTZJT-7733D	QDTD00MTZJ33
D702	ZENER DIODE DZ-6.8BSBT265 or	NDTB0DZ6R8BS
	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D1030	PCB JUMPER D0.6-P5.0	JW5.0T
D1033	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1035	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1036	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1037	PCB JUMPER D0.6-P7.5	JW7.5T
D1038	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1040	PCB JUMPER D0.6-P7.5	JW7.5T
D1041	PCB JUMPER D0.6-P10.0	JW10.0T
D1058	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1301	ZENER DIODE DZ-5.6BSBT265 or	NDTB0DZ5R6BS
	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D2010	PCB JUMPER D0.6-P5.0	JW5.0T
LED EXCLUSIVE(A)		
D564	LED(RED) 204HD/E	NPQZ00204HDE
D565	LED(RED) 204HD/E	NPQZ00204HDE
D566	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D567	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D2001	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D2002	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
LED EXCLUSIVE(B)		
D564	LED(RED) LTL-4211N	NPQZLTL4211N
D565	LED(RED) LTL-4211N	NPQZLTL4211N
D566	LED(GREEN) LTL-4231N	NPQZLTL4231N
D567	LED(GREEN) LTL-4231N	NPQZLTL4231N
D2001	LED(GREEN) LTL-4231N	NPQZLTL4231N
D2002	LED(GREEN) LTL-4231N	NPQZLTL4231N
	ICS	
IC301	IC:Y/C/A LA71091M	QSZBA0RSY012
IC501	MICROCONTROLLER 8BIT MN101D08EFD2	QSZAC0RMS006
IC751	IC:SWITCH TC4053BF(N) or	QSMBA0STS002
	IC:SWITCH BU4053BCF or	QSMDA0SRM010
	IC:ANALOG MULTIPLEXERS CD4053BCSJX	NSZBA0TF3071
IC1002	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC1004	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC1201	IC:OP AMP KIA4558P or	NSZBA0SJY004
	IC:OP AMP NJM4558D	QSZBA0SJR006
IC1402	DRIVER FOR DVD MM1622XJBE	QSZBA0TMM085

Ref. No.	Description	Part No.
	COILS	
L251	INDUCTOR 22µH-K-26T	LLAXKATTU220
L303	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L304	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L421	INDUCTOR 47µH-K-5FT	LLARKBSTU470
L422	PCB JUMPER D0.6-P5.0	JW5.0T
L501	PCB JUMPER D0.6-P5.0	JW5.0T
L502	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L503	INDUCTOR 12µH-K-26T	LLAXKATTU120
L701	INDUCTOR 4.7µH-K-26T	LLAXKATTU4R7
L1009	PCB JUMPER D0.6-P5.0	JW5.0T
L1010	PCB JUMPER D0.6-P5.0	JW5.0T
L1350	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L1351	INDUCTOR(0.47µH K) LAP02TAR47K	LLAXKATTUR47
L1401	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1441	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1442	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1461	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1481	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1521	INDUCTOR 47µH-K-5FT	LLARKBSTU470
L2001	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
	TRANSISTORS	
Q052	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q055	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q056	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q057	TRANSISTOR KTC3199(BL) or	NQS50KTC3199
	TRANSISTOR 2SC2785(K) or	QQSK02SC2785
	TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q301	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q302	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q303	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q391	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q421	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q422	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q423	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q424	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA

Ref. No.	Description	Part No.
Q425	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q501	TRANSISTOR KTC3199(BL) or	NQS50KTC3199
	TRANSISTOR 2SC2785(K) or	QQSK02SC2785
	TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q506	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q563	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q565	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q566	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q567	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q760	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q762	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q763	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1004	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q1005	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1006	TRANSISTOR KTA1267(Y) or	NQSY0KTA1267
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1175(J) or	QQSJ02SA1175
	TRANSISTOR 2SA1175(H) or	QQSH02SA1175
	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q1011	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q1201	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1202	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1203	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1204	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1351	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1385	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q2001	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q2002	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q2003	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
	RESISTORS	
R056	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R057	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R058	CHIP RES.(1608) 1/10W J 180 Ω or	RRXAJB5Z0181
	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJR5Z0181

Ref. No.	Description	Part No.
R060	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R061	CARBON RES. 1/6W J 1.2k Ω or	RCX6JATZ0122
	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R062	CARBON RES. 1/6W J 5.6k Ω or	RCX6JATZ0562
	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R063	PCB JUMPER D0.6-P5.0	JW5.0T
R073	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R075	CARBON RES. 1/6W J 4.7k Ω or	RCX6JATZ0472
	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R087	CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R088	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R090	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R091	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R253	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R254	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R303	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R304	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R305	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R306	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R309	CHIP RES.(1608) 1/10W J 15k Ω or	RRXAJB5Z0153
	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R311	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R312	CHIP RES.(1608) 1/10W J 1.2k Ω or	RRXAJB5Z0122
	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R313	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R322	CHIP RES.(1608) 1/10W J 5.6M Ω or	RRXAJB5Z0565
	CHIP RES.(1608) 1/10W J 5.6M Ω	RRXAJR5Z0565
R323	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R324	CHIP RES.(1608) 1/10W J 82k Ω or	RRXAJB5Z0823
	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJR5Z0823
R326	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R327	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R328	CHIP RES.(1608) 1/10W J 680k Ω or	RRXAJB5Z0684
	CHIP RES.(1608) 1/10W J 680k Ω	RRXAJR5Z0684
R329	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R330	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R331	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R332	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R341	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R342	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R343	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R357	PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Description	Part No.
R391	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R392	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R395	PCB JUMPER D0.6-P5.0	JW5.0T
R397	CHIP RES.(1608) 1/10W J 220 Ω or	RRXAJB5Z0221
	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R401	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R402	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R407	CHIP RES.(1608) 1/10W J 2.2M Ω or	RRXAJB5Z0225
	CHIP RES.(1608) 1/10W J 2.2M Ω	RRXAJR5Z0225
R408	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R409	CHIP RES.(1608) 1/10W J 3.3k Ω or	RRXAJB5Z0332
	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R410	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R411	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R412	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R413	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R414	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R415	CHIP RES.(1608) 1/10W J 12k Ω or	RRXAJB5Z0123
	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R416	CHIP RES.(1608) 1/10W J 330k Ω or	RRXAJB5Z0334
	CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R417	CHIP RES.(1608) 1/10W J 150 Ω or	RRXAJB5Z0151
	CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R418	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R419	CHIP RES.(1608) 1/10W J 910 Ω or	RRXAJB5Z0911
	CHIP RES.(1608) 1/10W J 910 Ω	RRXAJR5Z0911
R421	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R422	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R424	CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R425	CARBON RES. 1/6W J 100 Ω or	RCX6JATZ0101
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R426	CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R428	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R429	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R453	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R454	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R465	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R466	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R502	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R503	CHIP RES.(1608) 1/10W J 820 Ω or	RRXAJB5Z0821
	CHIP RES.(1608) 1/10W J 820 Ω	RRXAJR5Z0821

Ref. No.	Description	Part No.
R504	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R506	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R508	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R511	CHIP RES.(1608) 1/10W J 39k Ω or	RRXAJB5Z0393
	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R517	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R518	CHIP RES.(1608) 1/10W J 220k Ω or	RRXAJB5Z0224
	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R521	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R522	PCB JUMPER D0.6-P5.0	JW5.0T
R523	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R524	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R525	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R526	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R527	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R528	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R529	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R530	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R531	CARBON RES. 1/6W G 4.7k Ω or	RCX6GATZ0472
	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R532	CARBON RES. 1/6W G 1.5k Ω or	RCX6GATZ0152
	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R533	CARBON RES. 1/6W G 22k Ω or	RCX6GATZ0223
	CARBON RES. 1/4W G 22k Ω	RCX4GATZ0223
R534	CARBON RES. 1/6W G 470 Ω or	RCX6GATZ0471
	CARBON RES. 1/4W G 470 Ω	RCX4GATZ0471
R535	CARBON RES. 1/6W G 10k Ω or	RCX6GATZ0103
	CARBON RES. 1/4W G 10k Ω	RCX4GATZ0103
R536	CARBON RES. 1/6W G 3.6k Ω or	RCX6GATZ0362
	CARBON RES. 1/4W G 3.6k Ω	RCX4GATZ0362
R537	CHIP RES.(1608) 1/10W J 33k Ω or	RRXAJB5Z0333
	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R540	CHIP RES.(1608) 1/10W J 390k Ω or	RRXAJB5Z0394
	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R541	CHIP RES.(1608) 1/10W J 390k Ω or	RRXAJB5Z0394
	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R542	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R543	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R544	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R545	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R546	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R551	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R561	CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R566	CARBON RES. 1/6W J 220 Ω or	RCX6JATZ0221

Ref. No.	Description	Part No.
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R567	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R568	CARBON RES. 1/6W J 220 Ω or	RCX6JATZ0221
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R570	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R573	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R574	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R575	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R576	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R583	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R590	CHIP RES.(1608) 1/10W J 1.5k Ω or	RRXAJB5Z0152
	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R593	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R594	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R606	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R607	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R610	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R612	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R614	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R615	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R618	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R620	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R625	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R701	CHIP RES.(1608) 1/10W J 330 Ω or	RRXAJB5Z0331
	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R702	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R703	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R704	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R705	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R707	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R751	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R752	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R753	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R756	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R757	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R777	CARBON RES. 1/6W J 27k Ω or	RCX6JATZ0273
	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273

Ref. No.	Description	Part No.
R778	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R779	CARBON RES. 1/6W J 330 Ω or	RCX6JATZ0331
	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R780	CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R782	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R783	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R784	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R785	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R786	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R787	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R1025	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1044	CHIP RES.(1608) 1/10W J 220k Ω or	RRXAJB5Z0224
	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R1059	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1068	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1076	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R1077	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R1080	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1085	CHIP RES. 1/10W F 120 Ω or	RRXAFB5H1200
	CHIP RES. 1/10W F 120 Ω or	RRXAFB5Z1200
	CHIP RES. 1/10W F 120 Ω	RRXAFR5H1200
R1086	CHIP RES.(1608) 1/10W F 1.0k Ω or	RRXAFB5H1001
	CHIP RES.(1608) 1/10W F 1.0k Ω or	RRXAFB5Z1001
	CHIP RES.(100PPM) 1/10W F 1.0k Ω	RRXAFR5H1001
R1087	CHIP RES.(1608) 1/10W J 680 Ω or	RRXAJB5Z0681
	CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R1090	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R1091	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1203	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1204	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1205	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5H2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5Z2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFR5H2002
	CHIP RES.(1608) 1/10W F 20k Ω	RRXAFR5Z2002
R1206	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5H2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5Z2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFR5H2002
	CHIP RES.(1608) 1/10W F 20k Ω	RRXAFR5Z2002
R1207	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R1208	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R1209	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5H3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5Z3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFR5H3002
	CHIP RES.(1608) 1/10W F 30k Ω	RRXAFR5Z3002
R1210	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5H3002

Ref. No.	Description	Part No.
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5Z3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFR5H3002
	CHIP RES.(1608) 1/10W F 30k Ω	RRXAFR5Z3002
R1211	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1212	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1221	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1222	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1223	CHIP RES.(1608) 1/10W J 470 Ω or	RRXAJB5Z0471
	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1224	CHIP RES.(1608) 1/10W J 470 Ω or	RRXAJB5Z0471
	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1225	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1226	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1233	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1235	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1236	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1237	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1238	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1239	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1240	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1245	CHIP RES.(1608) 1/10W J 10 Ω or	RRXAJB5Z0100
	CHIP RES.(1608) 1/10W J 10 Ω	RRXAJR5Z0100
R1351	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R1352	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1353	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1354	CHIP RES.(1608) 1/10W J 220 Ω or	RRXAJB5Z0221
	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R1355	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1356	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1371	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1392	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1396	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1397	CHIP RES.(1608) 1/10W J 100 Ω or	RRXAJB5Z0101
	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R1402	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1422	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1442	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1443	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750

Ref. No.	Description	Part No.
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1462	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1482	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1612	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2001	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2002	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2003	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2005	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R2006	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2028	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2031	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R2051	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R2052	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R2053	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2054	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2055	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2056	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2063	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
	SWITCHES	
SW502	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW503	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW504	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW505	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW511	LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW512	ROTARY MODE SWITCH SSS-50MD or	SSR0106KB002
	ROTARY MODE SWITCH R8100245	SSR0106U3002
SW2002	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW2003	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
2B11	SHIELD ASSEMBLY H9200UD	0VM413279
2B15	BUSH, LED(F) H3700UD	0VM409508
2B33	HEATSINK H9400UD	0VM414786
2L013	SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080

Ref. No.	Description	Part No.
JC02	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JK751	RCA JACK MSP-213V1-324 PBSN	JXRL030LY064
JK752	RCA JACK MSP-382V-14 PBSN	JXRL020LY074
JK753	RCA JACK(YELLOW) MSP-281V4-B	JXRL010LY003
JK755	RCA JACK(WHITE) MSP-281V1-B	JXRL010LY005
JK756	RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JK1202	RCA JACK(BLACK) MSP-281V2-B	JXRL010LY062
JK1401	S TYPE JACK MDC-050V-2.4	JXEL040LY001
JK1403	RCA JACK MSP-213V1-652 PBSN	JXRL030LY061
RM2001	REMOTE RECEIVER MIM-93M6DKF or	USESJRSUNT01
	REMOTE RECEIVER PIC-37042LU	USESJRSKK033
TP301	PCB JUMPER D0.6-P10.0	JW10.0T
TP302	PCB JUMPER D0.6-P16.0	JW16.0T
TP502	PCB JUMPER D0.6-P5.0	JW5.0T
TP505	PCB JUMPER D0.6-P5.0	JW5.0T
TP506	PCB JUMPER D0.6-P14.0	JW14.0T
TP507	PCB JUMPER D0.6-P7.5	JW7.5T
TP513	PCB JUMPER D0.6-P10.0	JW10.0T
TP751	PCB JUMPER D0.6-P10.0	JW10.0T
TP753	PCB JUMPER D0.6-P7.5	JW7.5T
TP754	PCB JUMPER D0.6-P7.5	JW7.5T
TU701	TUNER UNIT VH025AP or	UTUNNTUSP024
	TUNER UNIT TMZH2-001A or	UTUNNTUAL030
	TUNER UNIT TMZH2-010B or	UTUNNTUAL034
	TUNER UNIT VH025AFE	UTUNNTUSP026
VR501	CARBON P.O.T. 100k Ω B	VRCB104HH014
W011	FFC CABLE, 22P FFC/P1.00/250	WX1H9400-011
W014	FFC CABLE, 16P FFC/P1.00/220	WX1H9400-014
W017	FFC CABLE, 4P FFC/P1.00/210	WX1H9400-017
X301	X'TAL 3.579545MHz(20PPM) or	FXC355LLN003
	X'TAL 3.579545MHz(20PPM) or	FXC355LCHE01
	X'TAL 3.579545MHz(20PPM) or	FXC355LDS001
	X'TAL 3.579545MHz(20PPM)	FXC355LDYN01
X502	X'TAL 32.768kHz(20PPM) or	FXC323LQUA01
	X'TAL 32.768kHz(20PPM) or	FXC323LDS002
	X'TAL 32.768kHz(20PPM)	FXC323LCHE01

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA(MCV-B) Consists of the following	----------
	DIODES	
LED EXCLUSIVE(A)		
D561	LED(RED) 204HD/E	NPQZ00204HDE
LED EXCLUSIVE(B)		
D561	LED(RED) LTL-4211N	NPQZLTL4211N
	RESISTORS	
R584	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R585	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R586	CHIP RES.(1608) 1/10W J 1.2k Ω or	RRXAJB5Z0122
	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R587	CHIP RES.(1608) 1/10W J 1.5k Ω or	RRXAJB5Z0152
	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R588	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
	SWITCHES	

Ref. No.	Description	Part No.
SW501	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW508	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW509	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW513	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW514	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
2B13	BUSH, LED(E) H1600UD	0VM408832
W104	PARALLEL WIRE, 3P AWG26#2651/P2.0/125	WX1H9400-104

DVD OPEN/CLOSE CBA

Ref. No.	Description	Part No.
	DVD OPEN/CLOSE CBA(MCV-C) Consists of the following	----------
	SWITCHES	
SW2001	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
W103	PARALLEL WIRE, 2P AWG26#2651/P2.0/100	WX1H9400-103

DVD SW CBA

Ref. No.	Description	Part No.
	DVD SW CBA(MCV-D) Consists of the following	----------
	SWITCHES	
SW2005	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW2006	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
W105	PARALLEL WIRE, 3P AWG26#2651/P2.0/100	WX1H9400-105

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists of the following	0VSA13627
	TRANSISTORS	
Q503	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q504	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F

PSV CBA

Ref. No.	Description	Part No.
	PSV CBA Consists of the following	0VSA14711
	POWER SUPPLY CBA (PSV-A) JUNCTION CBA (PSV-B)	---------- ----------

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA (PSV-A) Consists of the following	----------
	CAPACITORS	
C013	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C017	CERAMIC CAP. YV Z 0.01µF/50V	CCD1JZSYV103
C018	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMASDL471
	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASTL471
C020	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZPTL102
C021	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C1001⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE13
⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE05
⚠	METALLIZED FILM CAP. 0.022µF/250V K or	CT2E223DC011
⚠	METALLIZED FILM CAP. 0.022µF/250V M	CT2E223MS037
C1002	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C1003	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C1004	ELECTROLYTIC CAP. 220µF/200V M	CA2D221S6008
C1005	CERAMIC CAP. B K 120pF/500V	CCD2JKP0B121
C1006⚠	SAFETY CAP. 3300pF/250V or	CCG2EMA0F332
⚠	SAFETY CAP. 3300pF/250V	CCD2EMA0E332
C1007	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1008	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1013	CERAMIC CAP.(AX) X K 3300pF/16V	CCA1CKT0X332
C1014	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMASDL471
	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASTL471
C1022	CHIP CERAMIC CAP. B K 5600pF/50V	CHD1JK30B562
C1023	CERAMIC CAP. B K 470pF/100V	CCD2AKS0B471
C1029	CERAMIC CAP.(AX) X K 5600pF/16V	CCA1CKT0X562
C1032	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1033	CERAMIC CAP. YV Z 0.022µF/50V	CCD1JZSYV223
	DIODES	
D013	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D015	SCHOTTKY BARRIER DIODE SB360	NDQZ000SB360
D016	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D018	ZENER DIODE DZ-8.2BSAT265 or	NDTA0DZ8R2BS
	ZENER DIODE MTZJT-778.2A	QDTA0MTZJ8R2
D020	PCB JUMPER D0.6-P5.0	JW5.0T
D030	RECTIFIER DIODE BA157 or	NDQZ000BA157
	FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D1001	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1002	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1003	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1004	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1006	PCB JUMPER D0.6-P5.0	JW5.0T
D1007	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
D1008	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***

Ref. No.	Description	Part No.
D1010	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D1011	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D1012	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1018	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1020	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1022	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1024	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1025	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1031	PCB JUMPER D0.6-P5.0	JW5.0T
D1032	PCB JUMPER D0.6-P5.0	JW5.0T
	ICS	
IC1001⚠	PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
⚠	PHOTOCOUPLER EL817B or	NPEB000EL817
⚠	PHOTOCOUPLER EL817C	NPEC000EL817
IC1006	IC:SHUNT REGULATOR KIA431-AT or	NSZLA0TJY001
	IC:SHUNT REGULATOR TL431A-TA or	NSZBA0TQ2003
	IC KIA431A-AT or	NSZBA0TJY018
	IC:SHUNT REGULATOR TL431-TA	NSZBA0TQ2002
	COILS	
L003	BEAD CORE B16 RH 3.5X10X1.3	XL03010XM001
L009	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
L1001⚠	LINE FILTER 27MH TLF14CB2730R4 or	LLBG00ZTU034
⚠	LINE FILTER 27MH CSA-LF199A	LLBG00ZSA008
L1007	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
L1020	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
	TRANSISTORS	
Q1001	FET 2SK3543	QFWZ02SK3543
Q1003	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1008	TRANSISTOR KTC3199(Y)	NQSY0KTC3199
	RESISTORS	
R001	GLASS GLAZE RES. 1/2W J 3.3M Ω or	RXX2JZLZ0335
	CARBON RES. 1/2W J 3.3M Ω	RCX2335DP001
R037	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R082	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R1004	METAL OXIDE FILM RES. 2W J 82k Ω or	RN02JZLZ0823
	METAL OXIDE FILM RES. 2W J 82k Ω	RN02JZQZ0823
R1005	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1006	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1008	CARBON RES. 1/4W G 1k Ω	RCX4GATZ0102
R1010	CARBON RES. 1/6W J 6.8k Ω or	RCX6JATZ0682
	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1011	METAL OXIDE FILM RES. 1W J 0.68 Ω or	RN01R68ZU001
	METAL OXIDE FILM RES. 1W J 0.68 Ω	RN01R68KE009
R1019	CHIP RES.(1608) 1/10W F 2.2k Ω or	RRXAFR5H2201
	CHIP RES.(1608) 1/10W F 2.2k Ω	RRXAFR5Z2201
R1020	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152

Ref. No.	Description	Part No.
R1021	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1022	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R1023	CHIP RES.(1608) 1/10W F 2k Ω or	RRXAFR5H2001
	CHIP RES.(1608) 1/10W F 2k Ω	RRXAFR5Z2001
R1024	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R1029	CARBON RES. 1/6W J 82k Ω or	RCX6JATZ0823
	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R1032	CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1034	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1035	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1036	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1037	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1038	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1039	CARBON RES. 1/6W J 470k Ω or	RCX6JATZ0474
	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R1043	METAL OXIDE FILM RES. 1W J 2.7 Ω or	RN01JZLZ02R7
	METAL OXIDE FILM RES. 1W J 2.7 Ω	RN01JZQZ02R7
R1095	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
	MISCELLANEOUS	
AC1001 ⚠	AC CORD A0A0280-007 or	WAC0172LTE04
⚠	AC CORD PB8K9F9110A-057 or	WAC0172LW008
⚠	AC CORD PB8B2F9110A-057 or	WAC0172LW011
⚠	AC CORD A0A0280-017 or	WAC0172LTE06
⚠	AC CORD WAC0172ADE01	WAC0172ADE01
F1001⚠	FUSE SIC 1A 250V U/C T or	PAGG20CW3102
⚠	FUSE 1A/250V	PAGG20CAG102
FH1001	FUSE HOLDER MSF-015	XH01Z00LY001
FH1002	FUSE HOLDER MSF-015	XH01Z00LY001
T001⚠	SWITCHING TRANSFOMER CSA-SW0276A	LTT00CPSA140
W101	PARALLEL WIRE, 8P AWG26#2651/P2.0/65	WX1H9400-101
W102	PARALLEL WIRE, 7P AWG26#2651/P2.0/50	WX1H9400-102

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA (PSV-B) Consists of the following	---------
	CONNECTOR	
CN1005	CONNECTOR, 15P TUC-P15X-B1	JCTUS15TG001

DECK PARTS LIST

Ref.No	Description	Part No.
B2	CYLINDER ASSEMBLY MK12 NTSC 4HD	N1648CYL
B3	LOADING MOTOR ASSEMBLY MK12	0VSA13665
B8	PULLEY ASSEMBLY MK12	0VSA13500
B9	MOVING GUIDE S PREPARATION MK12	0VSA13560
B10	MOVING GUIDE T PREPARATION MK12	0VSA13562
B11	LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12	LOADING ARM(SP) ASSEMBLY MK12	0VSA13299
B31	AC HEAD ASSEMBLY MK12	0VSA13275
B35	TAPE GUIDE ARM ASSEMBLY MK12	0VSA13277
B37	CAPSTAN MOTOR 288/VCCM012	N9670CML
B52	CAP BELT MK10	0VM411138
B73	FE HEAD ASSEMBLY MK11 or	N9742FEL
	FE HEAD ASSEMBLY MK11 or	N9743FEL
	FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
	FE HEAD(MK11) VTR-1X2ERS11-148 or	DHVEC01TE004
	FE HEAD(MK12) VTR-1X2ERS11-155 or	DHVEC01TE005
	FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74	PRISM MK10	0VM202870
B121	WORM MK12	0VM414091
B126	PULLEY MK12	0VM414330B
B133	IDLER GEAR MK12	0VM305738
B134	IDLER ARM MK12	0VM305739
B148	TG CAP MK11	0VM412972
B300	C DRIVE LEVER(TU) MK12	0VM203773
B303	F DOOR OPENER MK12 or	0VM203751C
	F DOOR OPENER MK12	0VM203751
B313	C DRIVE SPRING MK12	0VM414145
B347	GUIDE HOLDER A MK10	0VM304920
B354	SLIDER(TU) MK12	0VM101172F
B355	SLIDER(SP) MK12 or	0VM101182F
	SLIDER(SP) SUB ASSEMBLY MK12 or	0VDM12542
	SLIDER(SP) MK12	0VM101182H
B359	CLEANER LEVER MK10	0VM304413
B360	CLEANER ROLLER MK9	0VM410032C
B361	CL POST MK10	0VM411114
B410	PINCH ARM(A) ASSEMBLY(4) MK12 or	0VSA13572
	PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411	PINCH SPRING MK12	0VM414644
B414	M BRAKE(SP) ASSEMBLY MK12	0VSA13282
B416	M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417	TENSION SPG(3002645) MK12	0VM414221F
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B482	CASSETTE PLATE MK12	0VM203749
B483	LOCK LEVER MK12	0VM414095
B487	BAND BRAKE(SP) MK12	0VM305723
B488	MODE LEVER MK12	0VM101173
B491	CAM GEAR(A) MK12	0VM101174
B492	MODE GEAR MK12	0VM203769
B494	C DOOR OPENER MK12	0VM305719
B499	T LEVER HOLDER MK12	0VM305729
B501	WORM HOLDER MK12 or	0VM203767
	WORM HOLDER(R) MK12	0VM204324
B502	CAM GEAR(B) MK12	0VM305721
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121

Ref.No	Description	Part No.
B513	CAM WASHER MK12	0VM414741
B514	SCREW RACK MK10	0VM411535
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B520	TU BRAKE SPRING MK12	0VM414285
B521	REV BRAKE SPRING MK12	0VM414222
B522	TG POST ASSEMBLY MK11	0VSA12080
B525	LDG BELT MK11	0VM412804
B529	CLEANER ASSEMBLY MK10	0VSA11161
B553	REV SPRING MK11	0VM412555
B555	RACK ASSEMBLY MK12	0VSA13289
B557	MOTOR PULLEY U5	0VM403205A
B558	LOADING MOTOR M31E-1 R14 7352 or	MMDZB12MM005
	LOADING MOTOR M31E-1 R-14 7376 or	MMDZB12MM003
	LOADING MOTOR M31E-1 R-14 7377	MMDZB12MM006
B559	CLUTCH ASSEMBLY MK12	0VSA13284
B560	KICK SPRING MK10	0VM411475A
B562	C DRIVE LEVER(SP) MK12	0VM203772
B563	SLIDER SHAFT MK12	0VM305762
B564	M GEAR MK12	0VM305735
B565	SENSOR GEAR MK12	0VM305736
B567	PINCH ARM(B) MK12	0VM305718
B568	BT ARM MK12	0VM305728
B570	CAM RACK SPRING(HI) MK11	0VM412923
B571	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL(SP)(D2) MK12	0VM203755
B574	REEL(TU)(D2) MK12	0VM203756
B587	TENSION LEVER ASSEMBLY MK12	0VSA13279
B590	BRAKE ARM(TU) MK12	0VM203752E
B591	BAND BRAKE(TU) MK12	0VM305724C
B592	TG POST MK11	0VM412550
B593	CAM HOLDER(F) ASSEMBLY MK12	0VSA13390
L1051	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341	SCREW, P-TIGHT M2X6 PAN HEAD+	GPMP2060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467	SCREW M2.6X5 WASHER HEAD+	SCM39050

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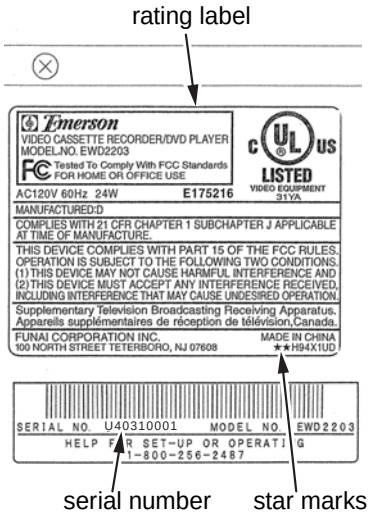
SERVICE MANUAL

Sec. 1: Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

Sec. 2: Deck Mechanism Section
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
- Alignment Procedures of Mechanism

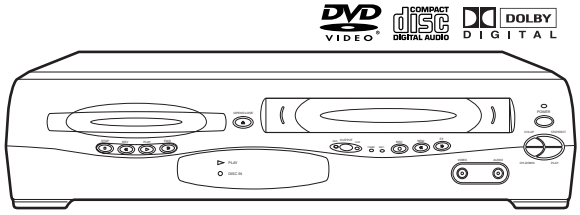
Sec. 3: Exploded views and Parts List Section
- Exploded views
- Parts List

This service manual is for the EWD2203 and EWD2003 Cost Down Version, which the serial numbers are later than U40310001 (EWD2203) or U44310001 (EWD2003).
These models differ from the models with the previous EWD2203 or EWD2003, and that star marks (★) are printed on the rating label are their applicable models. For the rating label on the rear panel, refer to right (example: EWD2203).

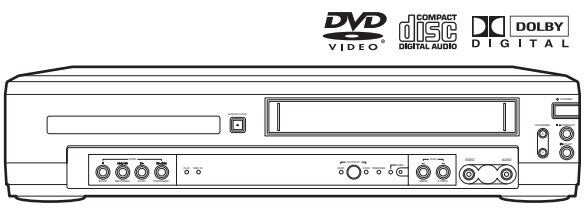


DVD PLAYER & VIDEO CASSETTE RECORDER

EWD2203



EWD2003



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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MAIN SECTION

DVD PLAYER &
VIDEO CASSETTE RECORDER

EWD2203/EWD2003

Sec. 1: Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

TABLE OF CONTENTS

SPECIFICATIONS

< VCR Section >

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	µsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

< DVD Section >

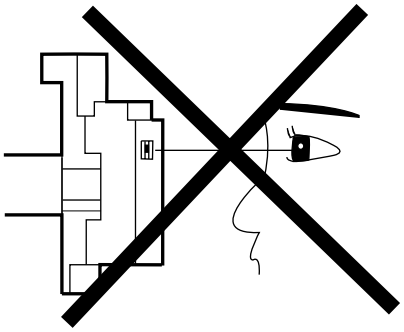
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. Video Output	75 ohm load	Vpp	1.0	± 0.1
2. Coaxial Digital Out	75 ohm load	mVpp	500	± 100
3. Audio (PCM)				
3-1. Output Level	1kHz 0dB	Vrms	2.0	
3-2. S/N		dB	100	
3-3. Freq. Response				
DVD	fs=48kHz 20~22kHz	dB	± 0.5	
CD	fs=44.1kHz 20~20 kHz	dB	± 0.5	
3-4. THD+N				
DVD	1 kHz 0dB	%	0.05	
CD	1 kHz 0dB	%	0.003	

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
3. Load imp. : 100 K ohm
4. Room ambient : +25 °C

LASER BEAM SAFETY PRECAUTIONS

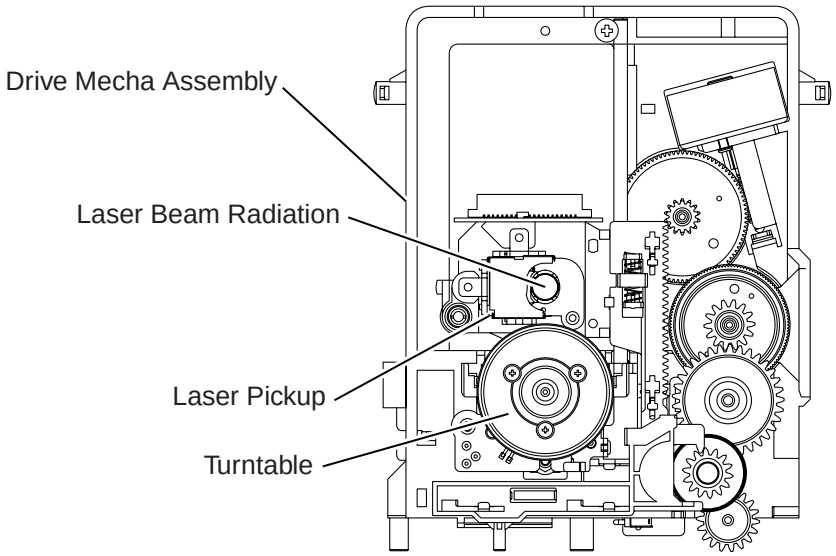
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced**.**

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')
120 V	≥ 3.2mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

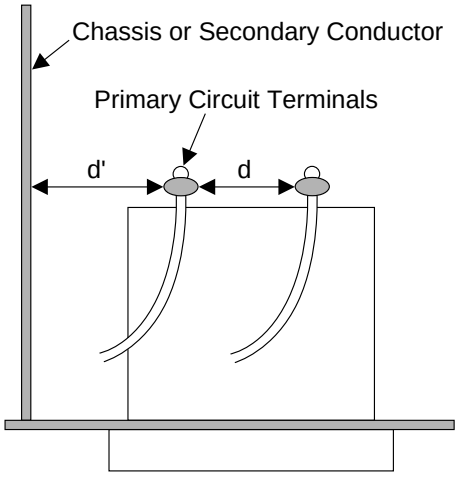


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

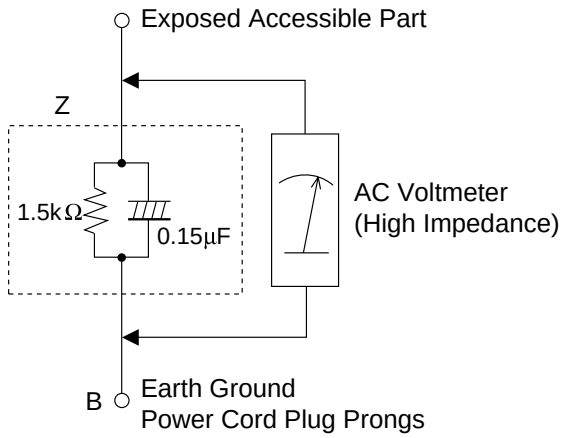


Fig. 2

Table 2: Leakage current ratings for selected areas

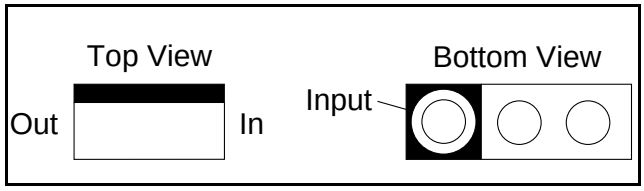
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

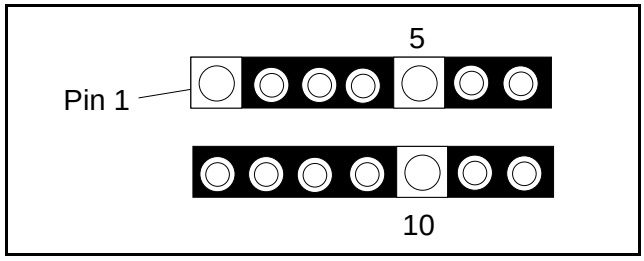
STANDARD NOTES FOR SERVICING

Circuit Board Indications

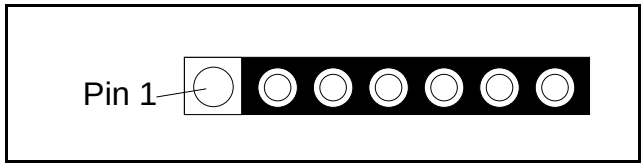
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

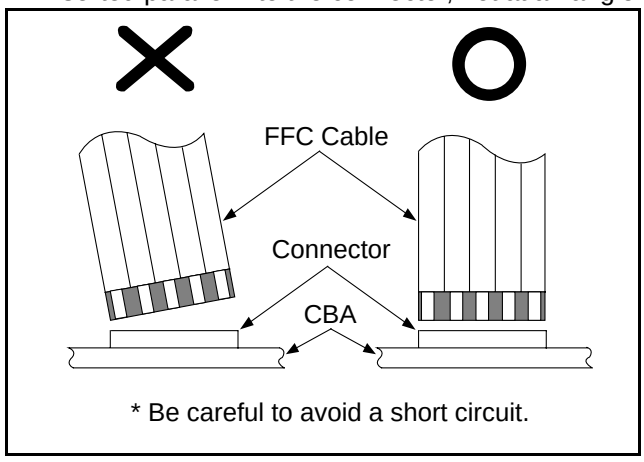


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:.

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

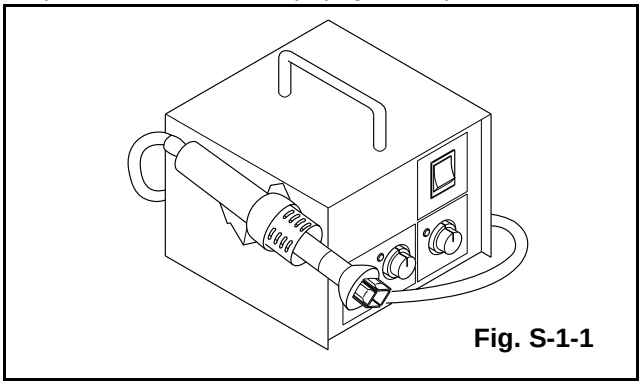


Fig. S-1-1

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Caution:

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

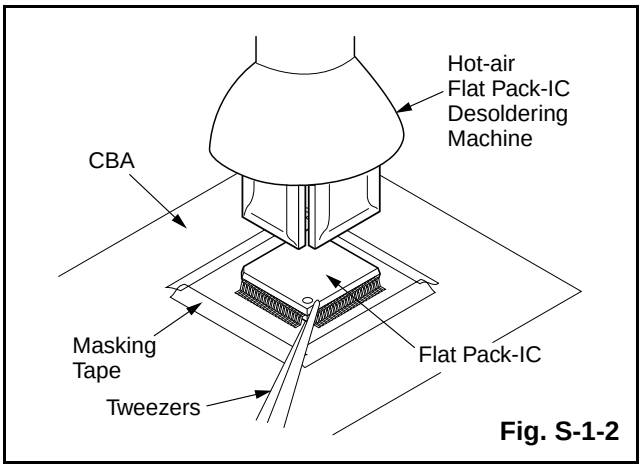


Fig. S-1-2

With Soldering Iron:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

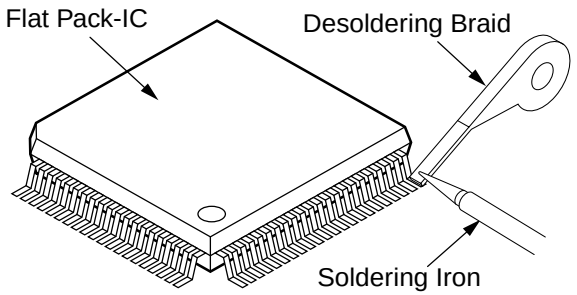


Fig. S-1-3

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

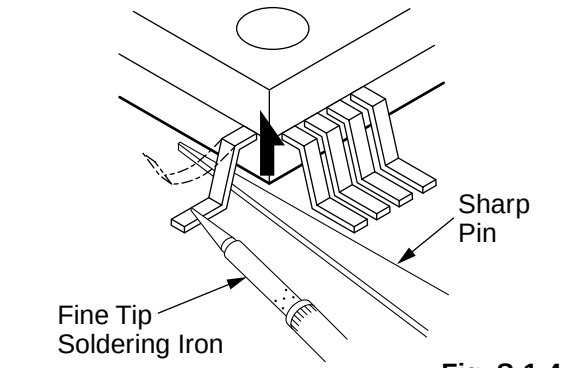


Fig. S-1-4

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note:

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

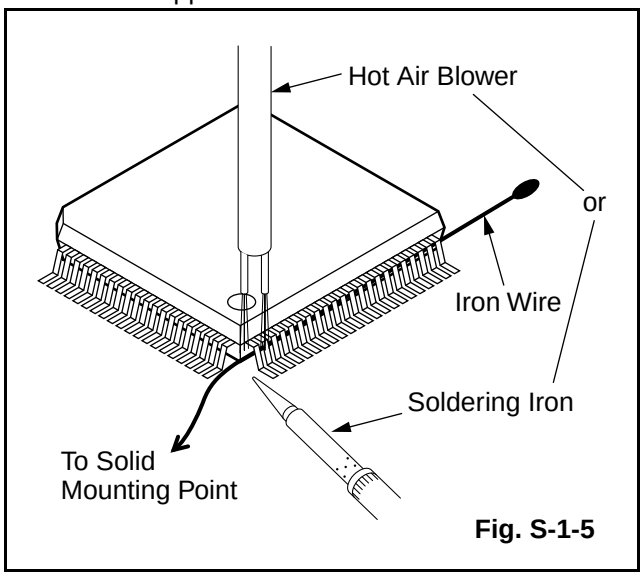


Fig. S-1-5

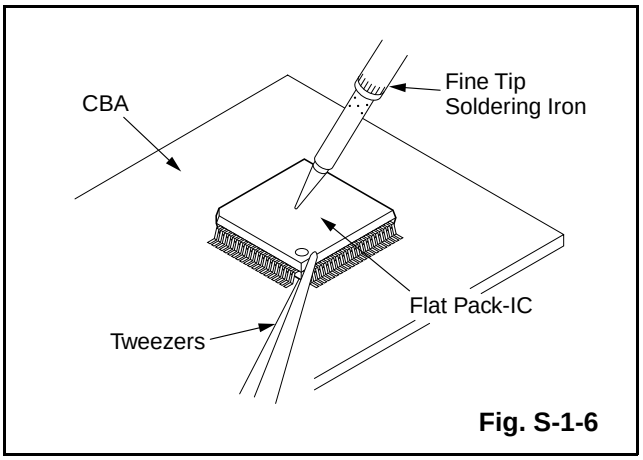


Fig. S-1-6

2. Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

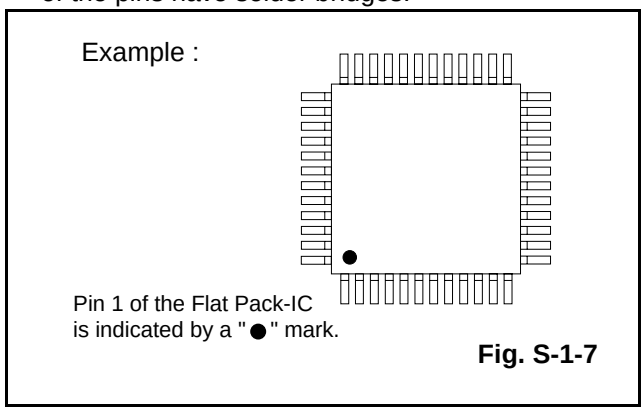


Fig. S-1-7

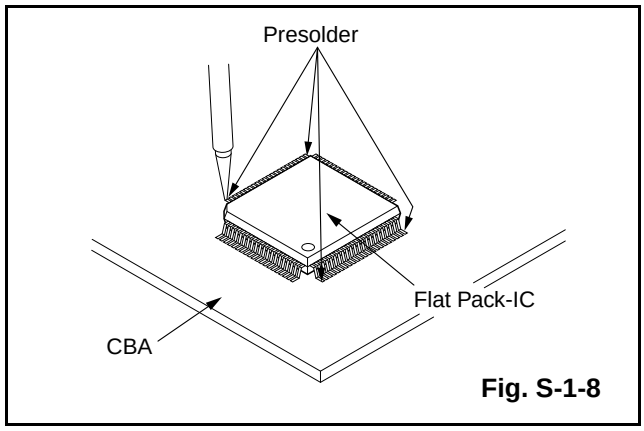


Fig. S-1-8

Instructions for Handling Semi-conductors

Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

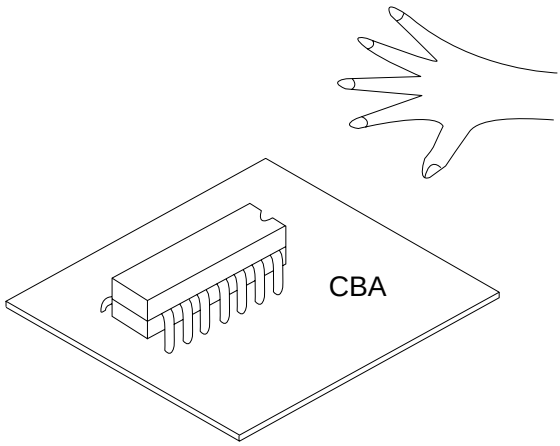
1. Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

(1) Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

< Incorrect >



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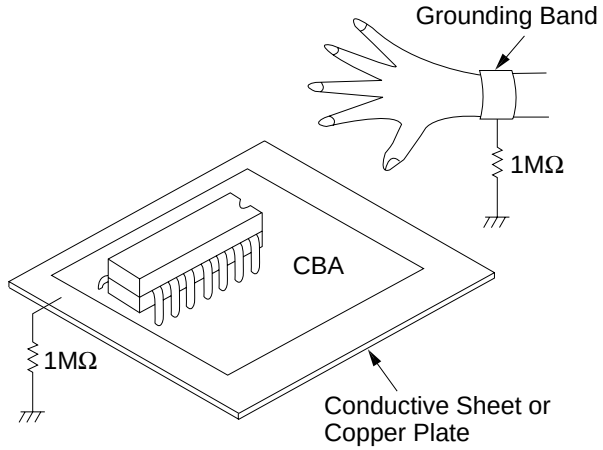


PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (SENSOR INHIBITION) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

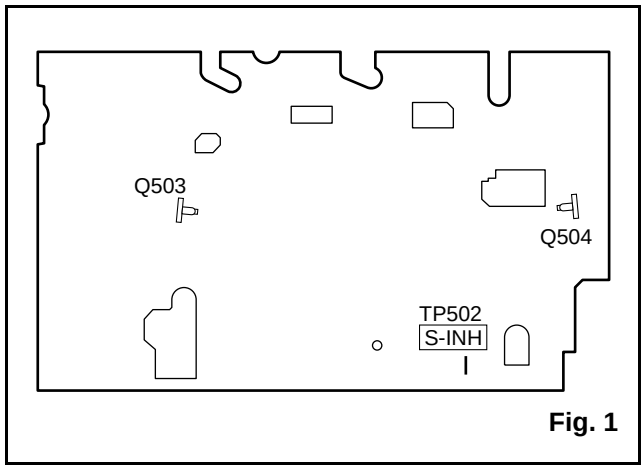


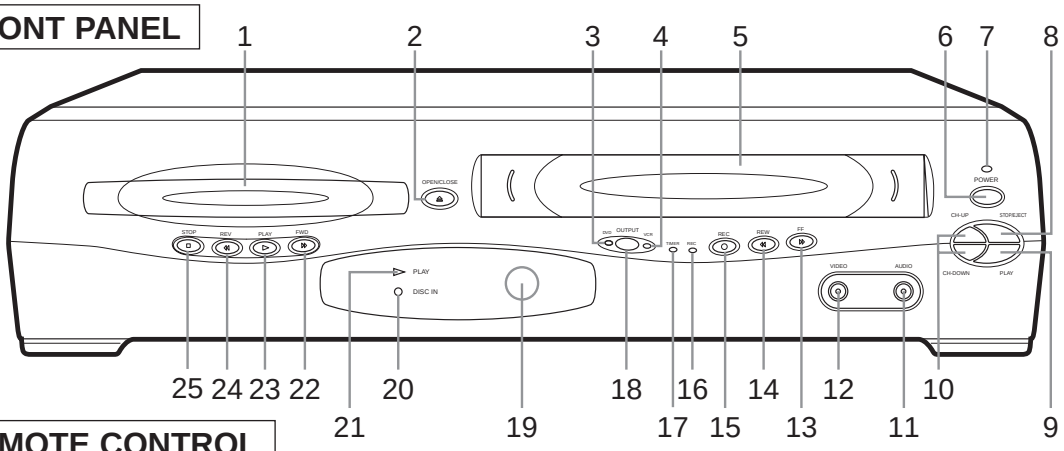
Fig. 1

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

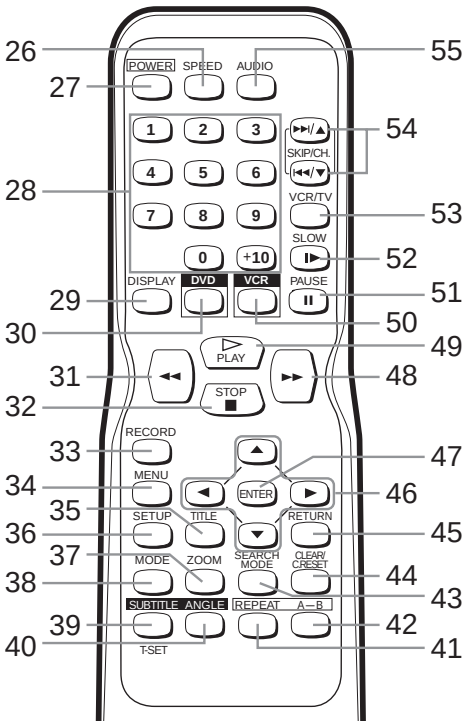
OPERATING CONTROLS AND FUNCTIONS

[EWD2203]

FRONT PANEL



REMOTE CONTROL



1. **Disc loading tray**
2. **OPEN/CLOSE Button**
   Press to insert discs into or remove them from the tray.
3. **DVD OUTPUT Light (Green)**
   This light appears when the DVD output mode is selected. You can only watch DVDs when the green DVD OUTPUT light is on. To make the green DVD OUTPUT light come on, press DVD on the remote control or OUTPUT on the front panel.
4. **VCR OUTPUT Light (Green)**
   This light appears when the VCR output mode is selected. You can only watch tapes when the green VCR OUTPUT light is on. To make the green VCR OUTPUT light come on, VCR on the remote control or OUTPUT on the front panel.
5. **CASSETTE COMPARTMENT**
6. **POWER Button**
   Press to turn the power on and off.
7. **POWER Light (red)**
   Light appears when the power is on.
8. **STOP/EJECT Button (VCR)**
   EJECT
   Press to remove the tape from the VCR.
   STOP
   Press to stop the tape motion.
9. **PLAY Button(VCR)**
   Press to begin playback.
10. **CH-(UP/DOWN) Buttons**
    In VCR mode, press to change TV channels on the VCR; press to adjust the tracking during normal or slow motion playback; press to remove vertical jitter in a Still picture.
11. **AUDIO In Jack**
    Connect an audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.
12. **VIDEO In Jack**
    Connect a video cable coming from the video out jack of a camcorder, another VCR, or a video source (laser disc player, camcorder, etc.) here.
13. **FF Button (VCR)**
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback. (Forward Search).
14. **REW Button (VCR)**
    Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
15. **REC Button**
    Press once to start a recording. Press repeatedly to start a One-Touch Recording.
16. **REC Light**
    Light appears during recording.
17. **TIMER Light**
    Light appears when the DVD/VCR is in standby mode for a timer recording or during a One-Touch Recording. It flashes if T-SET is pressed for a timer recording, but there is no tape in the DVD/VCR. It flashes when all timer recordings or One-Touch Recordings are finished.

18. OUTPUT Button

Press to select DVD mode or VCR mode.

- You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

19. Remote Sensor Window

20. DISC IN Light (green)

Light appears when a disc is in the DVD Player.

21. PLAY Light (green)

Light appears during Disc playback.

22. FWD Button (DVD)

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

Press to skip Chapters or Tracks.

23. PLAY Button (DVD)

Press to begin playback.

24. REV Button (DVD)

Press to view the DVD picture in fast reverse motion or to reverse playback of an Audio CD.

Press to skip Chapters or Tracks.

25. STOP Button (DVD)

Stops operation of the disc.

26. SPEED Button

Press to select the VCR's recording speed (SP or SLP)

27. POWER Button

Press to turn the power on and off.

28. Number Buttons

- **DVD mode**

  Press to select numbered items in a menu.

  +10

  Use this button to enter number 10 and above.

- **VCR mode**

  Press to select TV channels on the VCR.

  To select channels, enter channel numbers as a two-digit number for the quickest results. For example, to select channel 6, press 0 then 6.

29. DISPLAY Button

- **DVD mode**

  Press to access or remove the display screen during DVD or Audio CD playback.

- **VCR mode**

  Press to access or remove the VCR's on-screen status display.

30. DVD Button

Press to select DVD mode for the remote control.

- You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

31. ◄◄ Button

- **DVD mode**

  Press to view the DVD picture in fast reverse motion. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the reverse speed of slow motion.

- **VCR mode**

  Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).

32. STOP Button

- **DVD mode**

  Press to stop the disc motion.

- **VCR mode**

  Press to stop the tape motion.

33. RECORD Button

Press once to start a recording.

34. MENU Button

- **DVD mode**

  Press to display the menu of the Disc.

- **VCR mode**

  Press to access the VCR menu.

35. TITLE Button

36. SETUP Button

Press to enter DVD player setup mode.

37. ZOOM Button

Enlarges part of a DVD-reproduced image.

38. MODE Button

Activates program playback or random playback mode when playing CDs or MP3. Sets Black level and virtual surround.

39. SUBTITLE Button

Press to select the desired subtitle language.

T-SET Button

Press to put the VCR into standby mode for a timer recording.

40. ANGLE Button

Press to change the camera angle to see the sequence being played back from a different angle.

41. REPEAT Button

Repeats playback of the current disc, title, chapter or track.

42. A-B REPEAT Button

Repeats playback of a selected section.

43. SEARCH MODE Button

- **DVD mode**

  Press to access or remove the Search display, which allows you to go directly to a specific Title/Chapter/Track/Time.

- **VCR mode**

  Press to perform a Time Search or an Index Search.

44. CLEAR/C.RESET Button

- **DVD mode**

  Press to reset the setting.

- **VCR mode**

  Press to reset the counter. Press to exit from the MENU screen.

45. RETURN Button

- **DVD mode**

  Returns to the previous operation.

46. Arrow Buttons

Use when making settings while watching the display on a TV screen.

- **DVD mode**

  Moves the cursor and determines its position.

- **VCR mode**

  ▼/▲Buttons

  Press to enter digits when setting program (For example: setting clock or timer program). Press to select the setting modes from the on screen menu.

  ►Button

  When setting program (For example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input. Press to determine the setting modes from the on screen menu. Press to add or delete channel numbers during channel preset.

◄Button

Press to cancel a setting of timer program. Press to correct digits when setting program (For example: setting clock or timer program). Press to add or delete channel numbers during channel preset.

47. ENTER Button

- **DVD mode**

Press to accept a setting.

48. ►► Button

- **DVD mode**

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

- **VCR mode**

Press to rapidly advance the tape, or view the picture rapidly in forward during playback (Forward Search).

49. PLAY Button

- **DVD mode**

Press to begin playback.

- **VCR mode**

Press to begin playback.

50. VCR Button

Press to select VCR mode for the remote control.

- You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

51. PAUSE Button

- **DVD mode**

Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step (or one frame at a time).

- **VCR mode**

While recording, press to temporarily stop the recording (pause). Press a second time to resume normal recording. You can not pause a One-Touch Recording. Or, press during tape playback to freeze the picture. Press to advance the picture one frame at a time during still mode.

52. SLOW Button

During tape playback, press to view the video tape in slow motion. To return to playback, press PLAY. This button does not affect DVD playback.

53. VCR/TV Button

Use to select VCR or TV position.

- **VCR Position**

To view playback, to monitor video recording or to watch TV using the VCR tuner.

- **TV Position**

To watch TV or to view one program while recording another.

54. SKIP/CH. Buttons

- **DVD mode**

Press to skip Chapters or Tracks.

- **VCR mode**

Press to change TV channels on the VCR.

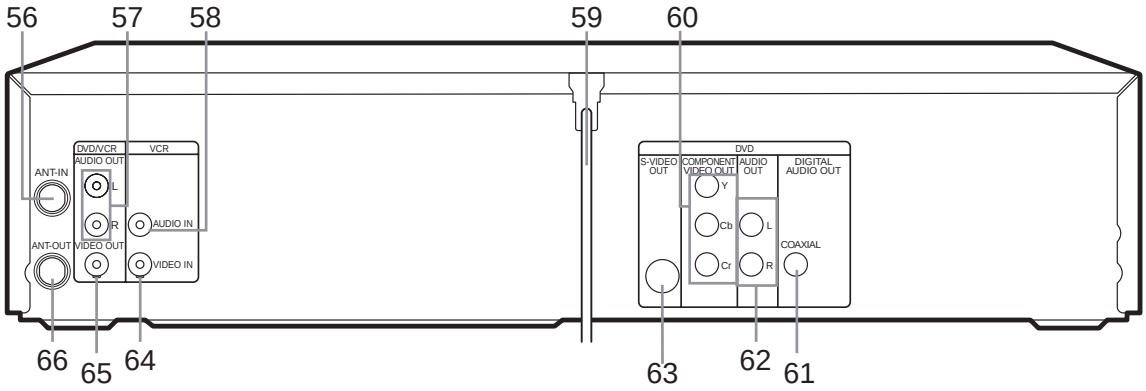
55. AUDIO Button

Press to select a desired audio language or sound mode.

Notes

- To use the remote control to operate the DVD/VCR COMBINATION UNIT and its features, press DVD on the remote control before pressing other DVD operation button. Verify that the green DVD OUTPUT Light is on.
- To use the remote control to operate the VCR and its features, press VCR on the remote control before pressing other VCR operation button. Verify that the green VCR OUTPUT Light is on.

REAR VIEW



56. ANT-IN (Antenna In) Jack
Connect your antenna, Cable Box, or Satellite decoder box.

57. DVD/VCR AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment.

58. AUDIO IN Jack
Connect an audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.

59. AC Power Cord
Connect to a standard AC outlet to supply power to the DVD/VCR COMBINATION UNIT.

DVD Playback only

60. COMPONENT VIDEO OUT Jacks
Connect optional component video cables here and to the component Video In jacks of a television.

61. COAXIAL Jack
Connect an optional coaxial digital audio cable here and to the Coaxial Digital Audio In jack of a decoder or audio receiver.

62. DVD ANALOG AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment (DVD only).

63. S-VIDEO OUT Jack
Connect an optional S-Video cable here and to the S-Video In jack of a television. (DVD only).

64. VIDEO IN Jack
Connect a cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

65. DVD/VCR VIDEO OUT Jack
Connect the yellow video cable (supplied) here and to the TV's Video In jack.

66. ANT-OUT (Antenna Out) Jack
Use the supplied RF coaxial cable to connect this jack to the ANTENNA IN Jack on your TV.

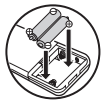
Notes
- The S-VIDEO OUT jack, COAXIAL jack, and COMPONENT VIDEO OUT jack are only useful in DVDmode.

Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

LOADING THE BATTERIES

1. Open the battery compartment cover.

2. Insert two AA batteries (supplied), with each one oriented correctly.

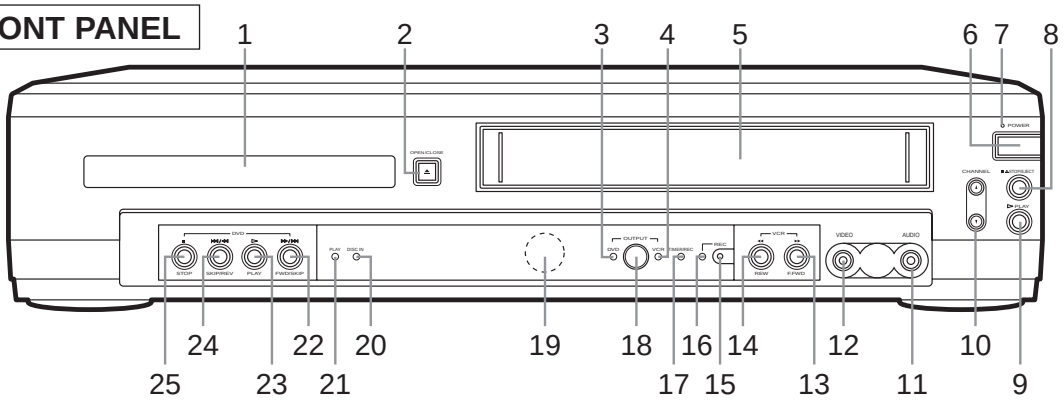


3. Close the cover.

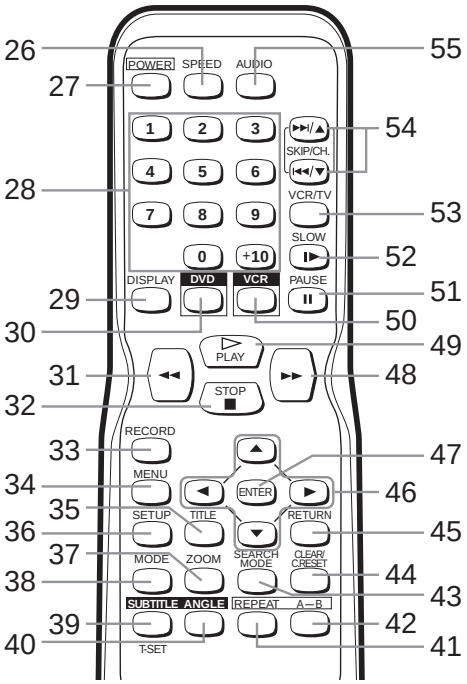
Notes
- Do not mix alkaline and manganese batteries.
- Do not mix old and new batteries.

[EWD2003]

FRONT PANEL



REMOTE CONTROL



1. **Disc loading tray**
2. **OPEN/CLOSE Button**
   Press to insert discs into or remove them from the tray.
3. **DVD OUTPUT Light (Green)**
   This light appears when the DVD output mode is selected. You can only watch DVDs when the green DVD OUTPUT light is on. To make the green DVD OUTPUT light come on, press DVD on the remote control or OUTPUT on the front panel.
4. **VCR OUTPUT Light (Green)**
   This light appears when the VCR output mode is selected. You can only watch tapes when the green VCR OUTPUT light is on. To make the green VCR OUTPUT light come on, VCR on the remote control or OUTPUT on the front panel.
5. **Cassette compartment**
6. **POWER Button**
   Press to turn the power on and off.
7. **POWER Light**
   This light appears when the power is on.
8. **STOP/EJECT Button (VCR)**
   EJECT
   Press to remove the tape from the VCR.
   STOP
   Press to stop the tape motion.
9. **PLAY Button(VCR)**
   Press to begin playback.
10. **CHANNEL (▲/▼) Buttons**
    In VCR mode, press to change TV channels on the VCR; press to adjust the tracking during normal or slow motion playback; press to remove vertical jitter in a Still picture.
11. **AUDIO In Jack**
    Connect audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.
12. **VIDEO In Jack**
    Connect a video cable coming from the video out jack of a camcorder, another VCR, or a video source (laser disc player, camcorder, etc.) here.
13. **F.FWD Button (VCR)**
    Press to rapidly advance the tape, or view the picture rapidly in forward during playback. (Forward Search).
14. **REW Button (VCR)**
    Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
15. **REC/OTR Button**
    Press once to start a recording. Press repeatedly to start a One-Touch Recording.
16. **REC Light**
    Lights up during recording.
17. **TIMER REC Light**
    This light appears when the DVD/VCR is in standby mode for a timer recording or during a One-Touch Recording. It flashes if T-SET is pressed for a timer recording, but there is no tape in the DVD/VCR. It flashes when all timer recordings or One-Touch Recordings are finished.
18. **OUTPUT Button**
    Press to select DVD mode or VCR mode.
    - You can switch the output mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

19. **Remote Sensor Window**
20. **DISC IN Light (green)**
    Light appears when a disc is in the DVD Player.
21. **PLAY Light (green)**
    Light appears during Disc playback.
22. **FWD/SKIP Button (DVD)**
    Press this button during playback to fast forward the Disc.
    Press this button in PAUSE mode to slow forward the Disc.
    Press to skip Chapters or Tracks.
23. **PLAY Button (DVD)**
    Press to begin playback.
24. **SKIP/REV Button (DVD)**
    Press this button during playback to fast reverse the Disc.
    Press this button in PAUSE mode to slow reverse the Disc.
    Press to skip Chapters or Tracks.
25. **STOP Button (DVD)**
    Stops operation of the disc.
26. **SPEED Button**
    Press to select the VCR's recording speed (SP or SLP)
27. **POWER Button**
    Press to turn the power on and off.
28. **Number Buttons**
    - **DVD mode**
      Press to select numbered items in a menu.
      +10
      Use this button to enter number 10 and above.
    - **VCR mode**
      Press to select TV channels on the VCR.
      To select channels, enter channel numbers as a two-digit number for the quickest results. For example, to select channel 6, press 0 then 6.
29. **DISPLAY Button**
    - **DVD mode**
      Press to access or remove the display screen during DVD or Audio CD playback.
    - **VCR mode**
      Press to access or remove the VCR's on-screen status display.
30. **DVD Button**
    Press to select DVD mode for the remote control.
    - You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**
31. **◄◄ Button**
    - **DVD mode**
      Press to view the DVD picture in fast reverse motion. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the reverse speed of slow motion.
    - **VCR mode**
      Press to rewind the tape, or to view the picture rapidly in reverse during the playback mode (Rewind Search).
32. **STOP Button**
    - **DVD mode**
      Press to stop the disc motion.
    - **VCR mode**
      Press to stop the tape motion.
33. **RECORD Button**
    Press once to start a recording.
34. **MENU Button**
    - **DVD mode**
      Press to display the menu of the Disc.
    - **VCR mode**
      Press to access the VCR menu.
35. **TITLE Button**
36. **SETUP Button**
    Press to enter DVD player setup mode.
37. **ZOOM Button**
    Enlarges part of a DVD-reproduced image.
38. **MODE Button**
    Activates program playback or random playback mode when playing CDs or MP3. Sets Black level and virtual surround.
39. **SUBTITLE Button**
    Press to select the desired subtitle language.
    T-SET Button
    Press to put the VCR into standby mode for a timer recording.
40. **ANGLE Button**
    Press to change the camera angle to see the sequence being played back from a different angle.
41. **REPEAT Button**
    Repeats playback of the current disc, title, chapter or track.
42. **A-B REPEAT Button**
    Repeats playback of a selected section.
43. **SEARCH MODE Button**
    - **DVD mode**
      Press to access or remove the Search display, which allows you to go directly to a specific Title/Chapter/Track/Time.
    - **VCR mode**
      Press to perform a Time Search or an Index Search.
44. **CLEAR/C.RESET Button**
    - **DVD mode**
      Press to reset the setting.
    - **VCR mode**
      Press to reset the counter. Press to exit from the MENU screen.
45. **RETURN Button**
    - **DVD mode**
      Returns to the previous operation in the DVD setup mode.
46. **Arrow Buttons**
    Use when making settings while watching the display on a TV screen.
    - **VCR mode**
      ▼/▲Buttons
      Press to enter digits when setting program (For example: setting clock or timer program). Press to select the setting modes from the on screen menu.
      ►Button
      When setting program (For example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input. Press to determine the setting modes from the on screen menu. Press to add or delete channel numbers during channel preset.
      ◄Button
      Press to cancel a setting of timer program. Press to correct digits when setting program (For example: setting clock or timer program). Press to add or delete channel numbers during channel preset.
47. **ENTER Button**
    - **DVD mode**
      Press to accept a setting.

48. ►► Button

● **DVD mode**

Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

● **VCR mode**

Press to rapidly advance the tape, or view the picture rapidly in forward during playback (Forward Search).

49. PLAY Button

● **DVD mode**

Press to begin playback.

● **VCR mode**

Press to begin playback.

50. VCR Button

Press to select VCR mode for the remote control.

● You can switch the OUTPUT mode either by pressing OUTPUT on the front panel, or by pressing DVD or VCR on the remote control. However, **if you press OUTPUT on the front panel first, you need to re-select the corresponding mode by pressing DVD or VCR on the remote control.**

51. PAUSE Button

● **DVD mode**

Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step (or one frame at a time).

● **VCR mode**

While recording, press to temporarily stop the recording (pause). Press a second time to resume normal recording. You can not pause a One-Touch Recording. Or, press during tape playback to freeze the picture. Press to advance the picture one frame at a time during still mode.

52. SLOW Button

During tape playback, press to view the video tape in slow motion. To return to playback, press PLAY.

53. VCR/TV Button

Use to select VCR or TV position.

● **VCR Position**

To view playback, to monitor video recordings or to watch TV using the VCR tuner.

● **TV Position**

To watch TV or to view one program while recording another.

54. SKIP/CH. Buttons

● **DVD mode**

Press to skip Chapters or Tracks.

● **VCR mode**

Press to change TV channels on the VCR.

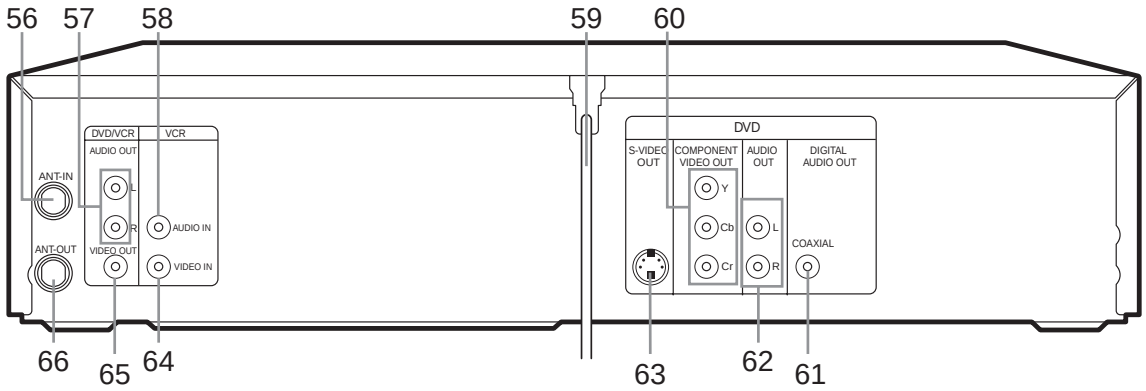
55. AUDIO Button

Press to select a desired audio language or sound mode.

Notes

- To use the remote control to operate the DVD/VCR COMBINATION UNIT and its features, press DVD on the remote control before pressing other DVD's operation buttons. Verify that the green DVD OUTPUT Light is on.
- To use the remote control to operate the VCR and its features, press VCR on the remote control before pressing other VCR's operation buttons. Verify that the green VCR OUTPUT Light is on.

REAR VIEW



56. ANT-IN (Antenna In) Jack

Connect your antenna, Cable Box, or Satellite decoder box.

57. DVD/VCR AUDIO OUT Jacks

Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment.

58. AUDIO IN Jack

Connect audio cable coming from the audio out jack of a camcorder, another VCR, or an audio source here.

59. AC Power Cord

Connect to a standard AC outlet to supply power to the DVD/VCR COMBINATION UNIT.

DVD Playback only

60. COMPONENT VIDEO OUT Jacks

Connect optional component video cables here and to the component Video In jacks of a television.

61. COAXIAL Jack

Connect an optional coaxial digital audio cable here and to the Coaxial Digital Audio In jack of a decoder or audio receiver.

62. DVD ANALOG AUDIO OUT Jacks
Connect the supplied audio cables here and to the Audio In jacks of a television or other audio equipment (DVD only).

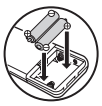
63. S-VIDEO OUT Jack
Connect an optional S-Video cable here and to the S-Video In jack of a television. (DVD only)

64. VIDEO IN Jack
Connect a cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

LOADING THE BATTERIES

1. Open the battery compartment cover.

2. Insert two AA batteries, with each one oriented correctly.



3. Close the cover.

Notes
- Do not mix alkaline and manganese batteries.
- Do not mix old and new batteries.

65. DVD/VCR VIDEO OUT Jack
Connect the yellow video cable (supplied) here and to the TV's Video In jack.

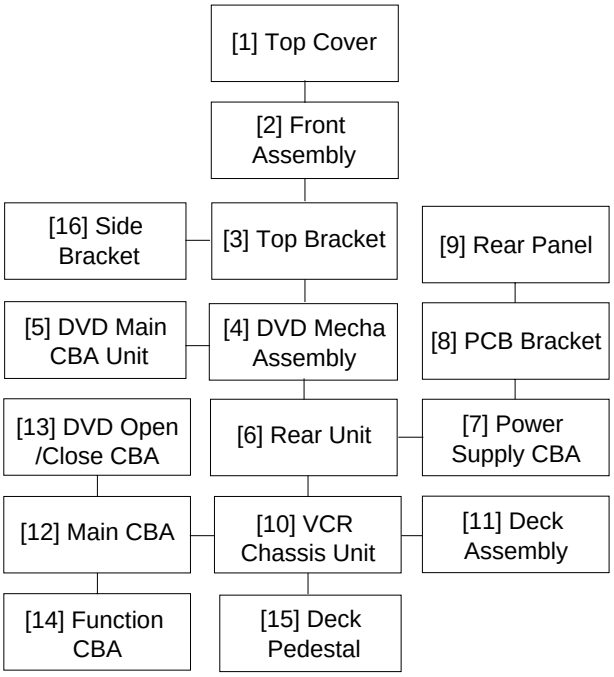
66. ANT-OUT (Antenna Out) Jack
Use the supplied RF coaxial cable to connect this jack to the ANTENNA IN Jack on your TV.

Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	D1	7(S-1)	-
[2]	Front Assembly	D2	(S-3), *7(L-1)	1 1-1 1-2
[3]	Top Bracket	D2	4(S-2)	-
[4]	DVD Mecha Assembly	D3	3(S-4), *CN401, *CN601,*CN302	-
[5]	DVD Main CBA Unit	D4	2(S-5), *CN201, *CN301	2 2-1 2-2 2-3 3
[6]	Rear Unit	D5	5(S-6), 3(S-7), (S-7A) CN1005	-
[7]	Power Supply CBA	D6	4(S-8)	-
[8]	PCB Bracket	D6	3(S-9)	-
[9]	Rear Panel	D6	----------	-
[10]	VCR Chassis Unit	D7	5(S-10), 4(S-11)	-
[11]	Deck Assembly	D8	Desolder, 2(S-12)	4,5
[12]	Main CBA	D8	----------	-
[13]	DVD Open/ Close CBA	D8	Desolder	-
[14]	Function CBA	D8	Desolder	-
[15]	Deck Pedestal	D9	7(S-13)	-
[16]	Side Bracket	D9	(S-14)	-
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw, CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) are fragile. Be careful not to break them.

1-1. Remove Screw (S-3).

1-2. Release seven Locking Tabs (L-1) (to do this, first release five Locking Tabs (A) at the side and top, and then release two Locking Tabs (B) at the bottom.)

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup follow next procedures.

2-1. Slide the pickup unit as shown in Fig. D4.

2-2. Short the three short lands of FPC cable with solder before removing the FFC cable (CN301) from it. If you disconnect the FFC cable (CN301), the laser diode of pickup will be destroyed. (Fig. D4)

2-3. Disconnect Connector (CN201). Remove two Screws (S-5) and lift the DVD Main CBA Unit. (Fig. D4)

CAUTION 3: When reassembling, confirm the FFC cable (CN301) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. D4)

4. When reassembling, solder wire jumpers as shown in Fig. D8.

5. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

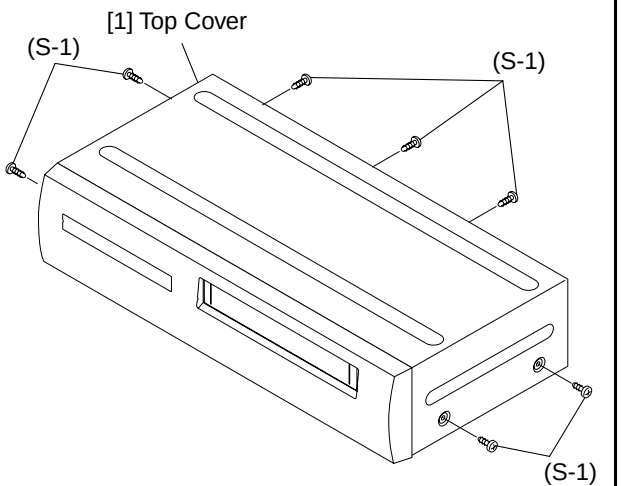


Fig. D1

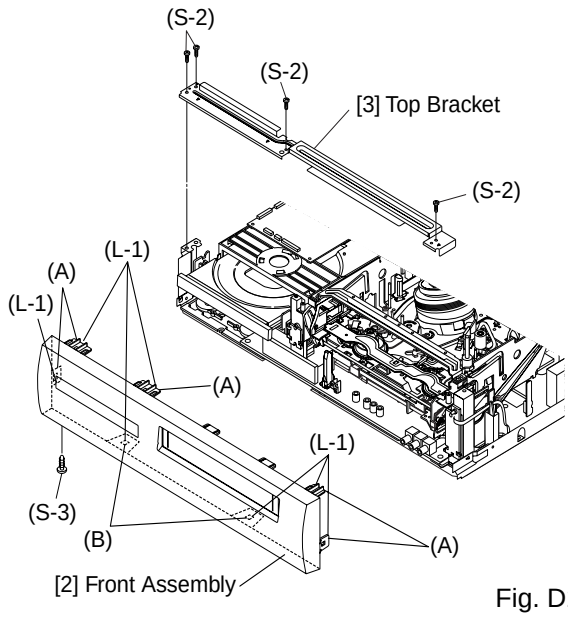


Fig. D2

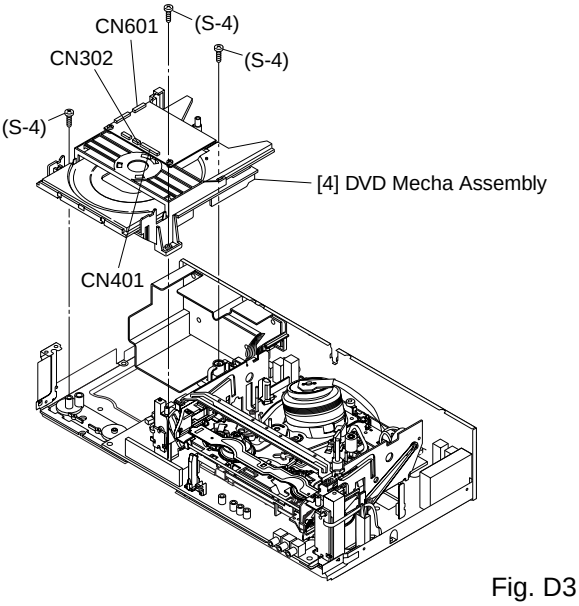
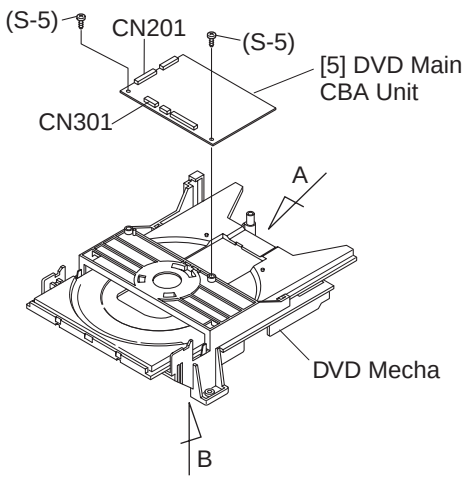
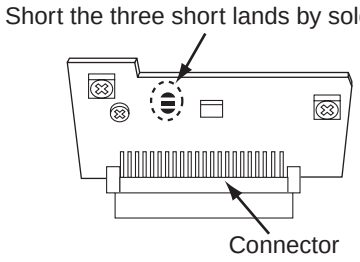


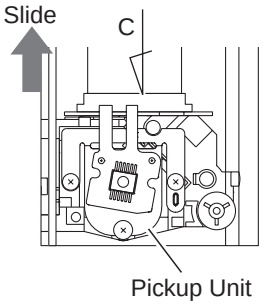
Fig. D3



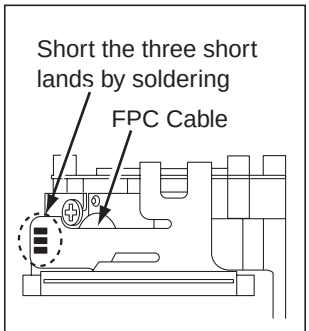


View for A

OR



View for B



View for C

Fig. D4

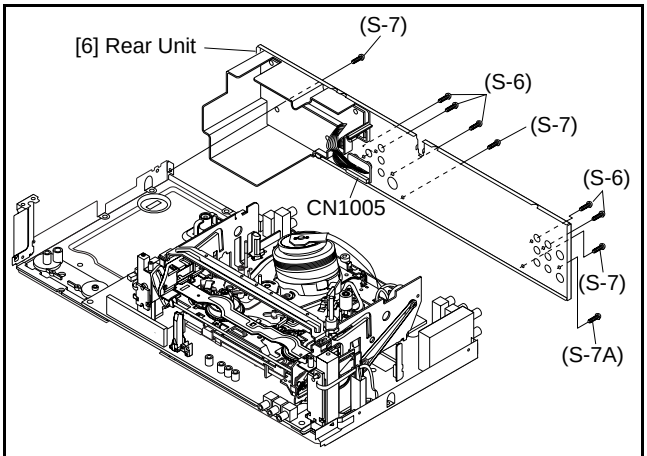


Fig. D5

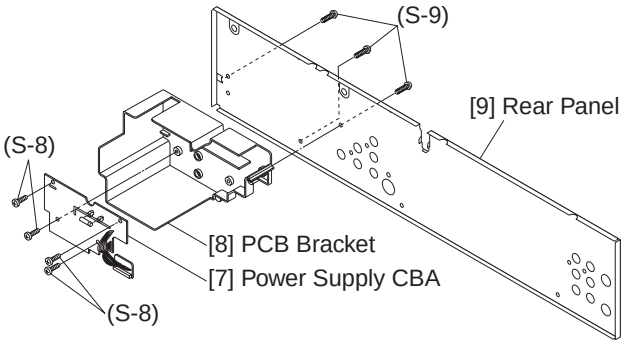


Fig. D6

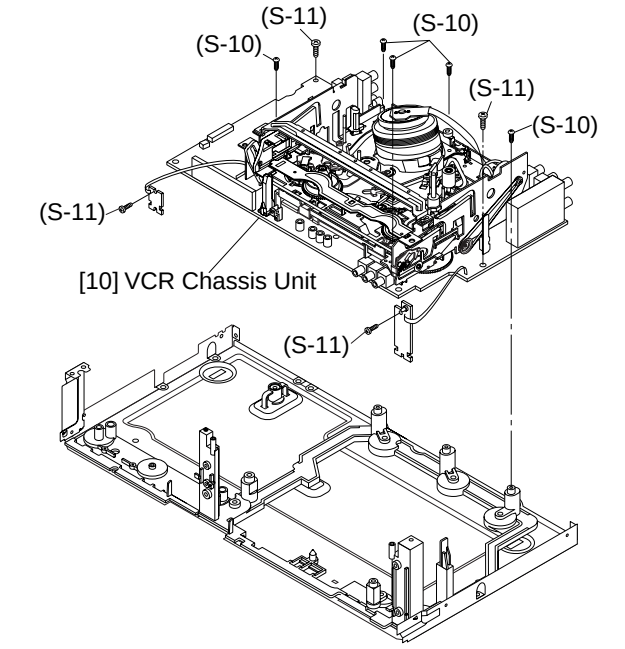
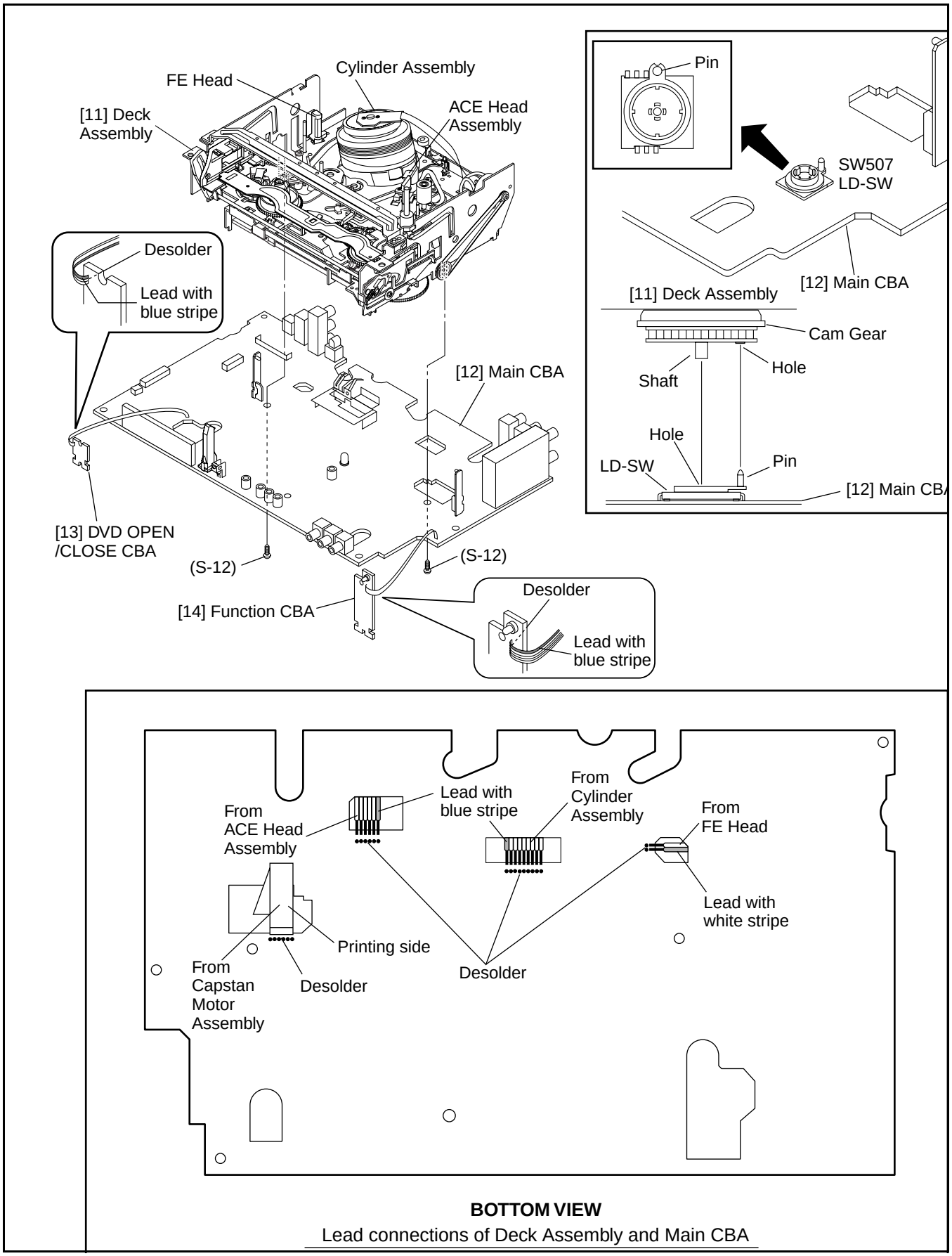


Fig. D7



BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

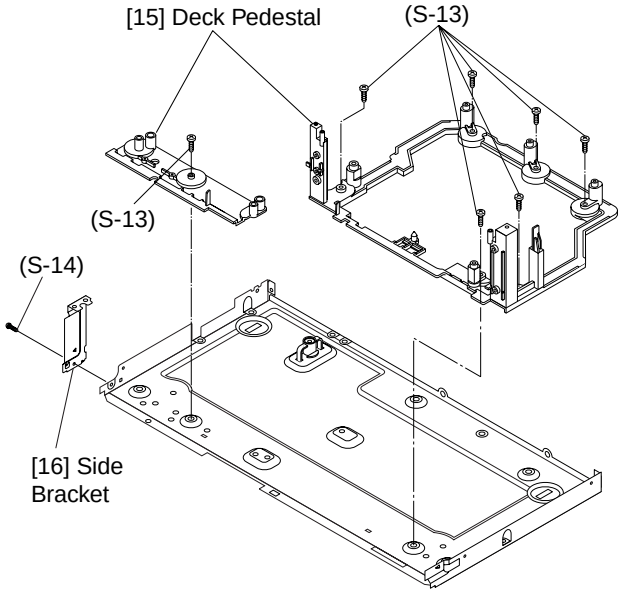
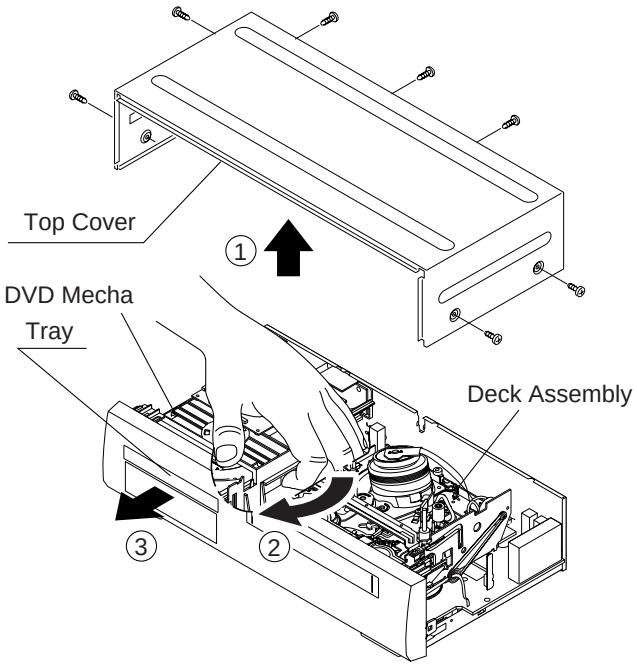
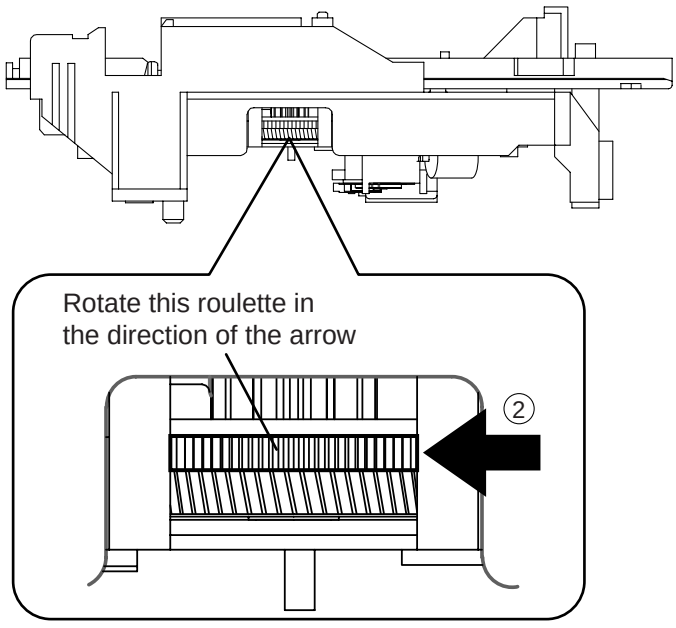


Fig. D9

HOW TO MANUAL EJECT

1. Remove the Top Case.
2. Rotate this roulette in the direction of the arrow as shown below.





ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching point during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point) (MAIN CBA)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H±1H (412.7μs±60μs)	

Connections of Measurement Equipment

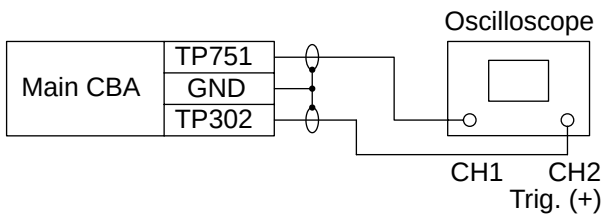
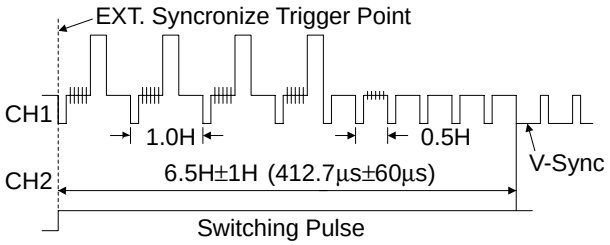


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H(412.7μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD player into version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order. The tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

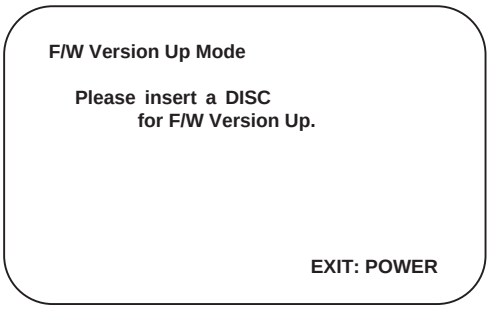


Fig. a Version Up Mode Screen

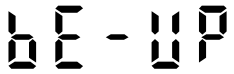


Fig. b VFD in Version Up Mode

   The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.
3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. c appears on the screen and Fig. d appears on the VFD.

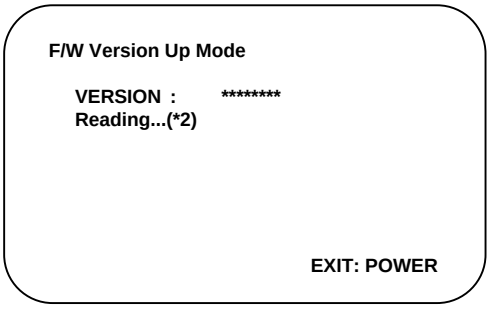


Fig. c Programming Mode Screen

Fig. d VFD in Programming Mode (Example)

   The appearance shown in (*2) of Fig. c is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*3) of Fig. e appears on the VFD. (Fig. f)

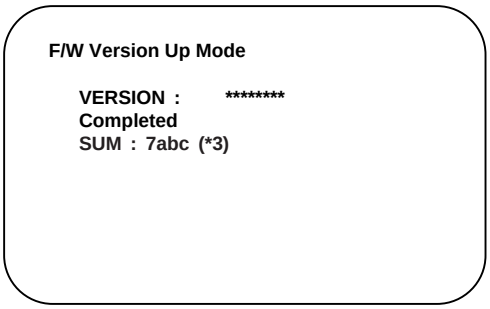


Fig. e Completed Program Mode Screen

Fig. f VFD upon Finishing the Programming Mode (Example)

   At this time, no buttons are available.
6. Unplug the AC cord from the AC outlet. Then plug it again.
7. Turn the power on by pressing the power button and the tray will close.
8. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

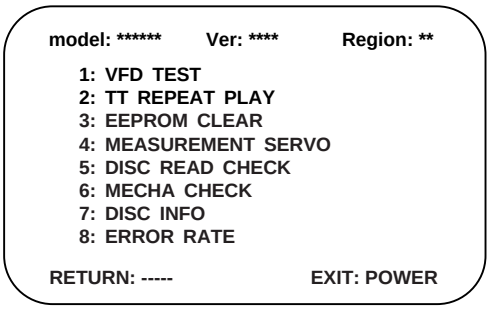


Fig. g

9. Press [3] button on the remote control unit.
   Fig. h appears on the screen.

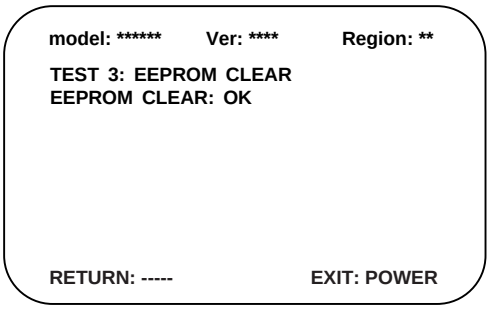
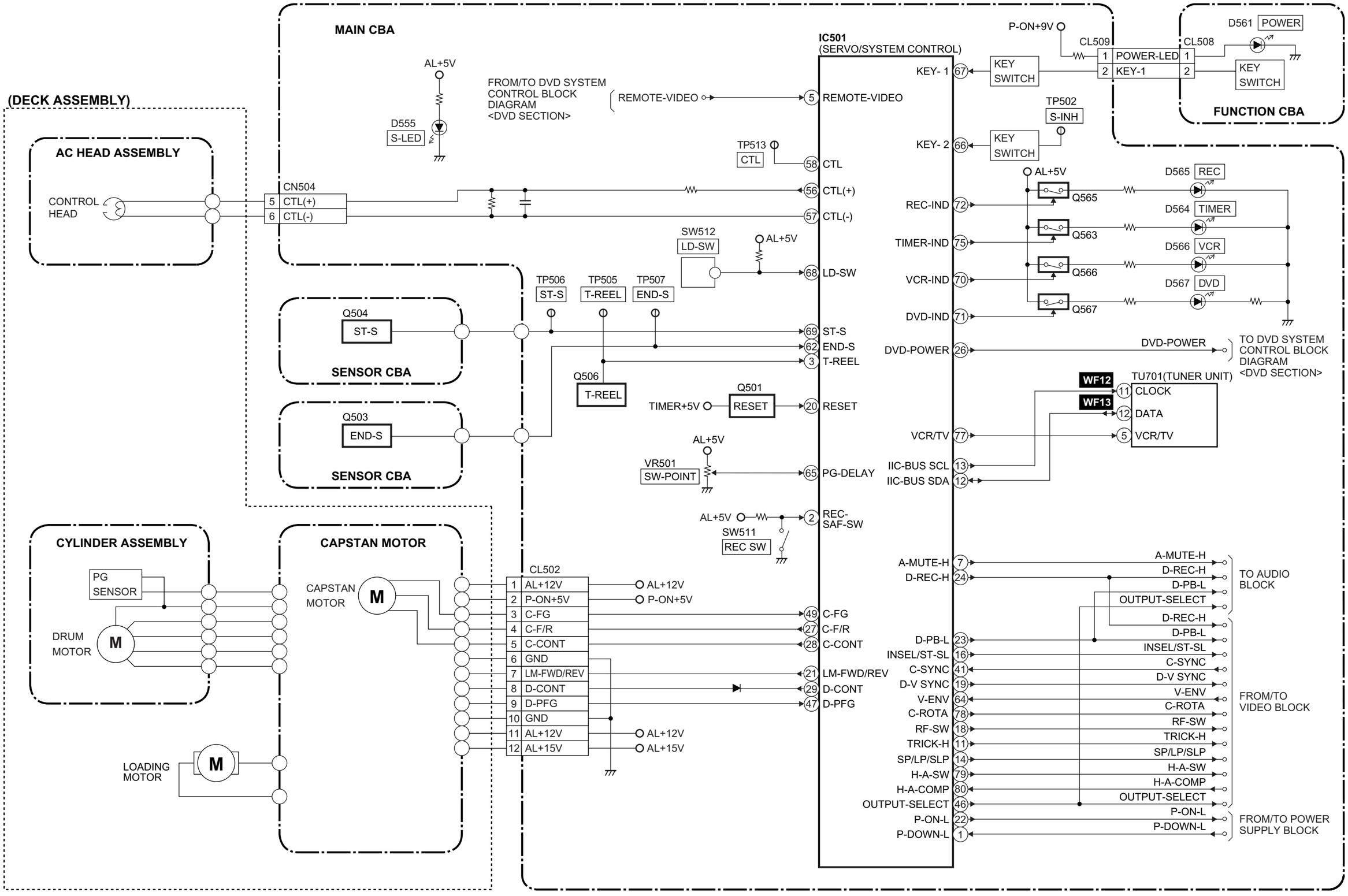


Fig. h

10. To finish this mode, press [POWER] button.

BLOCK DIAGRAMS <VCR SECTION>

Servo/System Control Block Diagram



Video Block Diagram

REC VIDEO SIGNAL | PB VIDEO SIGNAL | DVD VIDEO SIGNAL | MODE: SP/REC

MAIN CBA

TP751 V-OUT WF1
JK751 V-OUT
Q391 BUFFER
IC751 (OUTPUT SELECT)
VCR
DVD
SW CTL
IC501 (OSD)
OSD CHARACTER MIX
FROM SERVO/SYSTEM CONTROL BLOCK DIAGRAM
OUTPUT SELECT
Q760
TU701
WF11
VIDEO IN
VIDEO OUT
WF15
IC301 (Y/C PROCESS)
TUNER
6dB AMP
CCD 1H DELAY
Q301 BUFFER
JK752 REAR V-IN
FROM DVD VIDEO/AUDIO BLOCK DIAGRAM <DVD SECTION>
DVD-VIDEO
REAR
V-AGC
FBC
Y/C MIX
DOC YNR Y/C COMB
LUMINANCE SIGNAL PROCESS
JK753 FRONT V-IN
FRONT
INSEL/ST-SL
D-PB-L
REC/EE/PB
D-REC-H
TRICK-H
C-SYNC
C-ROTA
D-V SYNC
SP/LP/SLP
FROM/TO SERVO/SYSTEM CONTROL BLOCK DIAGRAM
SYNC SEPA
CHROMINANCE SIGNAL PROCESS
AGC AMP
(DECK ASSEMBLY)
VIDEO (R)-1 HEAD
VIDEO (L)-1 HEAD
VIDEO (L)-2 HEAD
VIDEO (R)-2 HEAD
CYLINDER ASSEMBLY
CL253
V(R)-1
V-COM
V(L)-1
V(L)-2
V-COM
V(R)-2
TP302
WF2
RF-SW
FROM/TO SERVO/SYSTEM CONTROL BLOCK DIAGRAM
RF-SW
V-ENV
H-A-SW
H-A-COMP
H-A-COMP
SP
LP/EP
HPF
ENV DET
TP301
C-PB
WF3

Audio Block Diagram

PB-AUDIO SIGNAL REC-AUDIO SIGNAL DVD AUDIO SIGNAL Mode : SP/REC

MAIN CBA

TU701
AUDIO-OUT 14 WF14
MOD-A 2 WF10
Q763 BUFFER
Q762 BUFFER
DVD-A(R)
DVD-A(L)
FROM DVD VIDEO/AUDIO BLOCK DIAGRAM <DVD SECTION>

REAR
JK751
A-OUT (R)
A-OUT (L)
JK756
A-OUT (R)
A-OUT (L)

TP753 A-OUT (R)
TP754 A-OUT (L)
IC751 (OUTPUT SELECT)
4 DVD 5 VCR 3
14 DVD 12 VCR 13
SW CTL 9 10 11
Q760
OUTPUT SELECT
FROM SERVO/SYSTEM CONTOL BLOCK DIAGRAM

FRONT
JK752 A-IN
JK755 A-IN

IC301 (AUDIO PROCESS)
80 76 78
TUNER
LINE 1
LINE 2
ALC
R P
LINE AMP
MUTE
96
4 EQ AMP 1 2 3 100
SP/LP-ON
AUTO BIAS 99 6 7
REC AMP
98
D-REC-H 11
REC/EE/PB 12 16
D-PB-L
A-MUTE-H
D-REC-H
FROM SERVO/SYSTEM CONTROL BLOCK DIAGRAM

(DECK ASSEMBLY)
AC HEAD ASSEMBLY
AUDIO HEAD
AUDIO ERASE HEAD
FE HEAD
FULL ERASE HEAD

CL504
4 A-PB/REC
3 A-COM
1 AE-H
2 AE-H/FE-H
CL501
1 FE-H
2 FE-H-GND

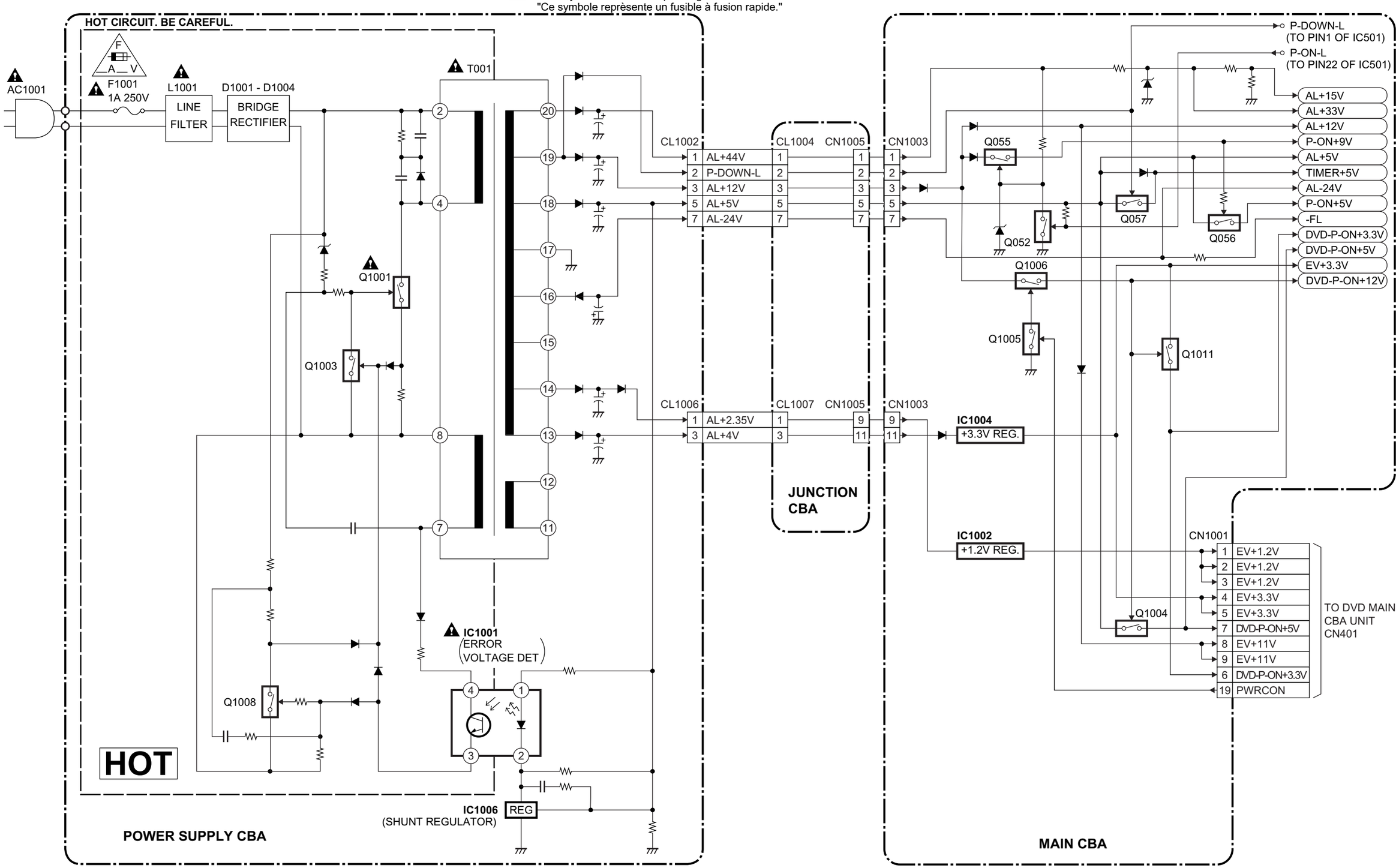
Q422 BIAS OSC
Q421
P-ON+5V
Q423 (PB=ON)
Q425 (SWITCHING D-REC OFF)
P-ON+5V
Q424 (PB=ON)

Power Supply Block Diagram

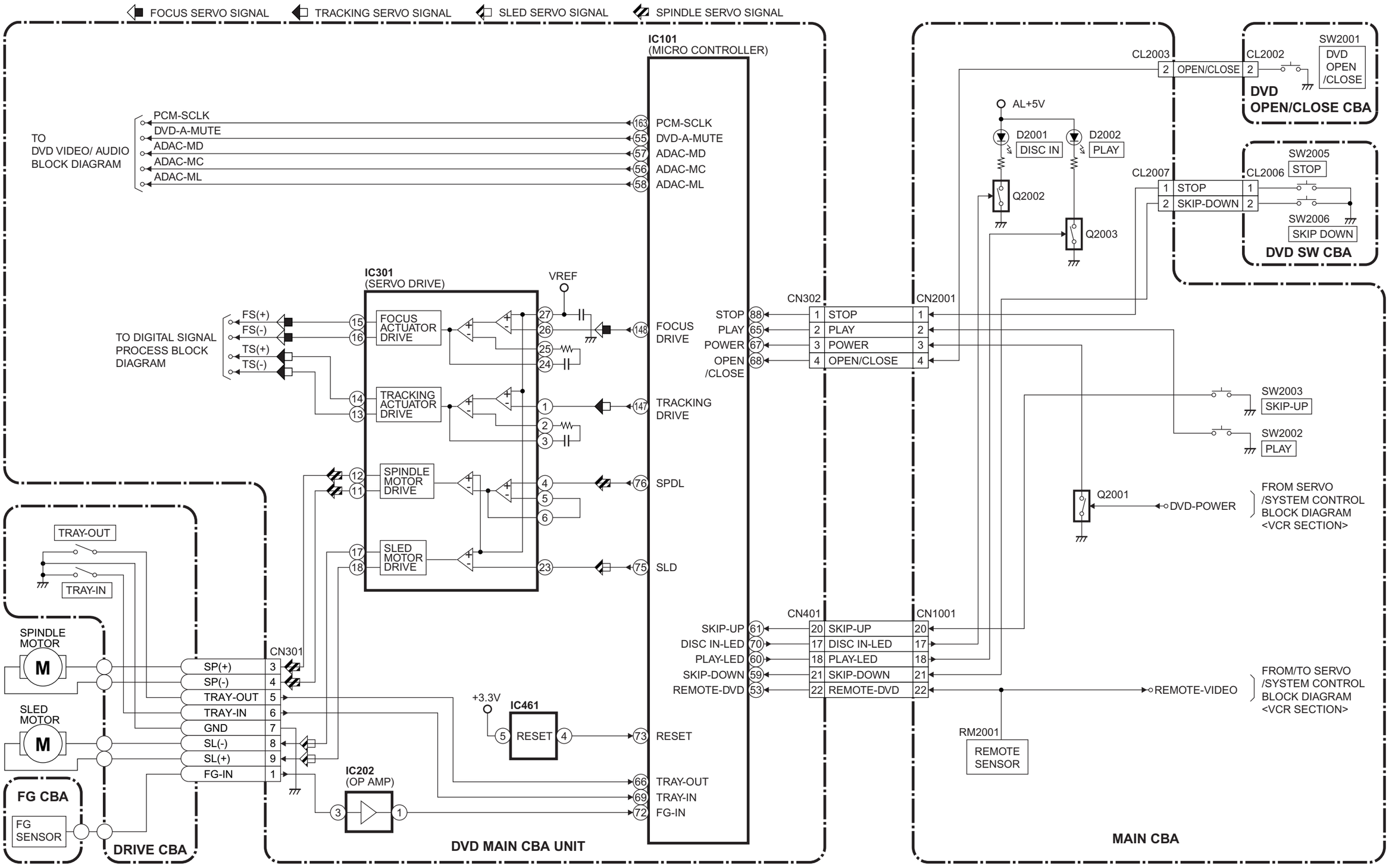
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE -REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

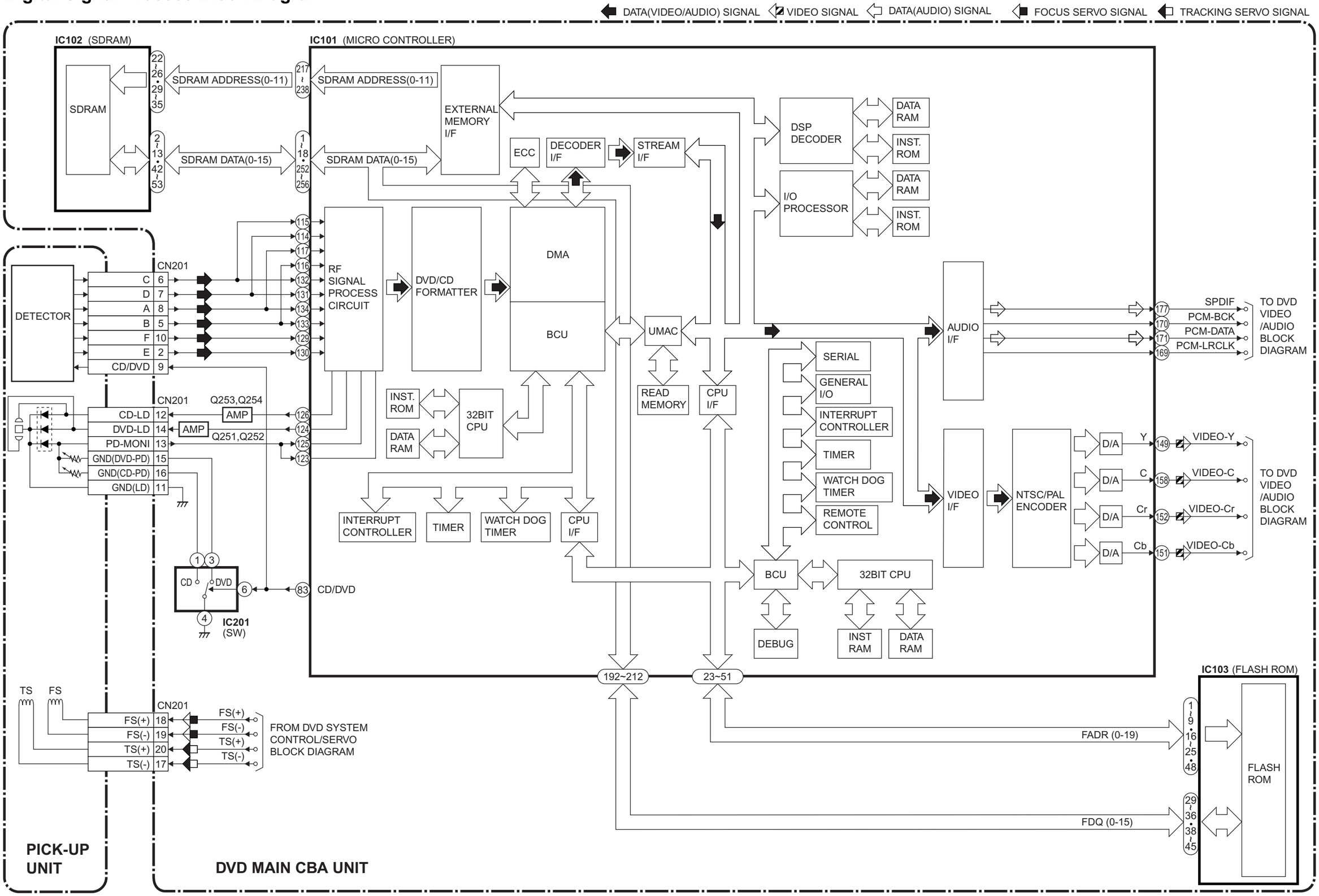
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



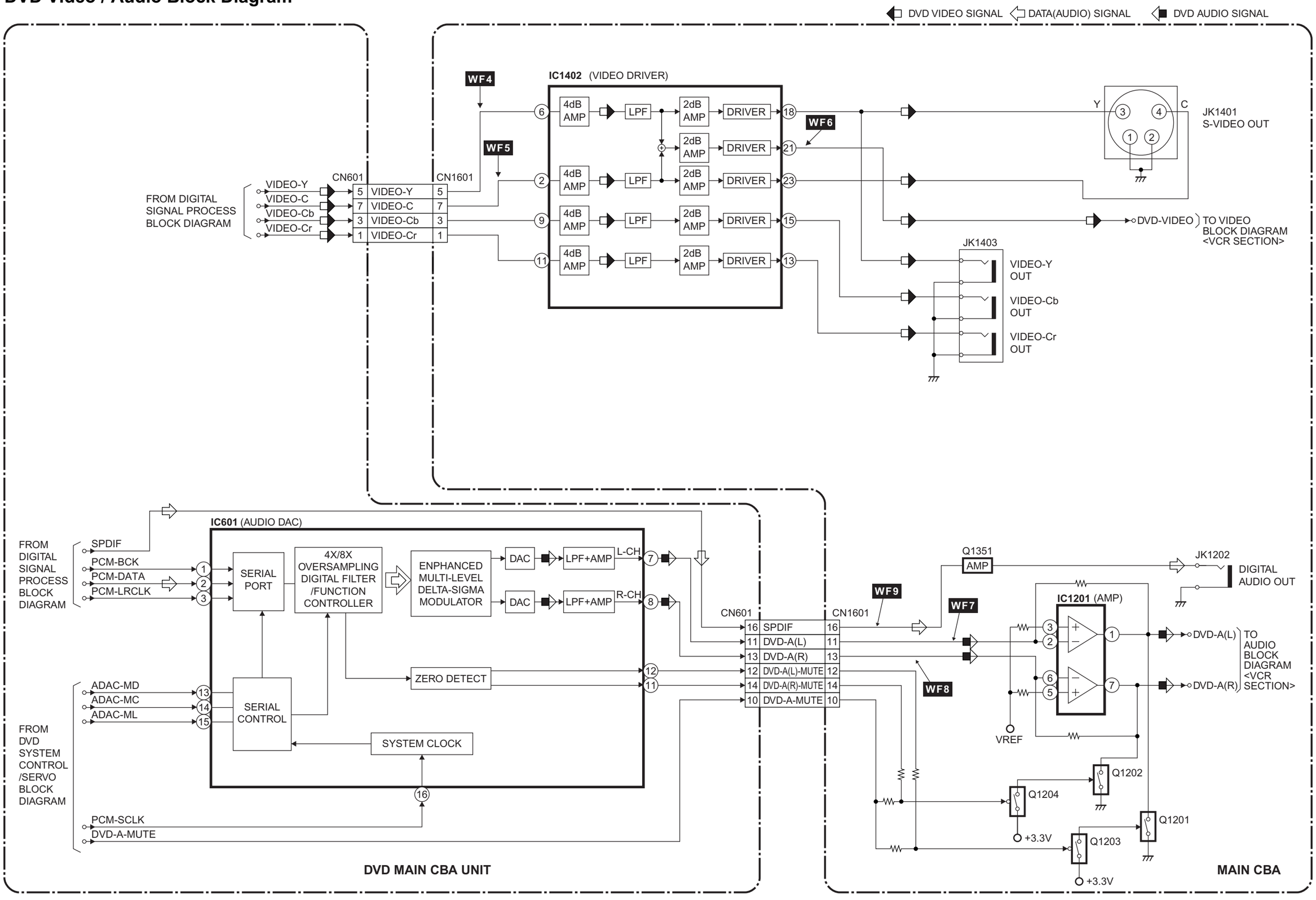
DVD System Control/Servo Block Diagram



Digital Signal Process Block Diagram



DVD Video / Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

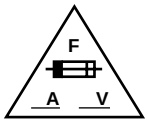
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

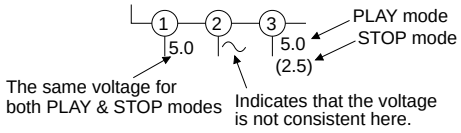
4. Wire Connectors

(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

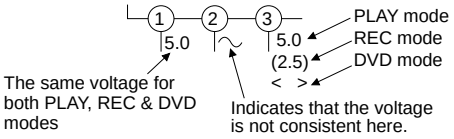
5. Mode: SP/REC

6. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >

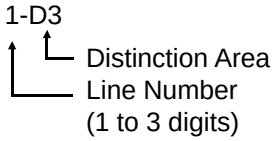


< VCR Section >



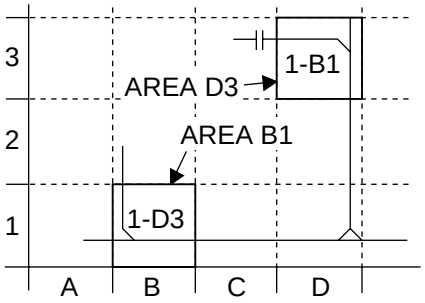
Unit: Volts

7. How to read converged lines



Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

 : Indicates a test point with a jumper wire across a hole in the PCB.

 : Used to indicate a test point with a component lead on foil side.

 : Used to indicate a test point with no test pin.

 : Used to indicate a test point with a test pin.

Main 1/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL

SYSCON/TIMER/SERVO BLOCK

MAIN 1/7

Ref No.	Position
IC	
IC501	C-3
TRANSISTORS	
Q501	D-1
Q506	A-3
CONNECTORS	
CL501	A-4
CL502	F-4
CL504	A-4
VARIABLE RESISTOR	
VR501	B-4
TEST POINTS	
TP505	B-3
TP513	B-4

MAIN CBA

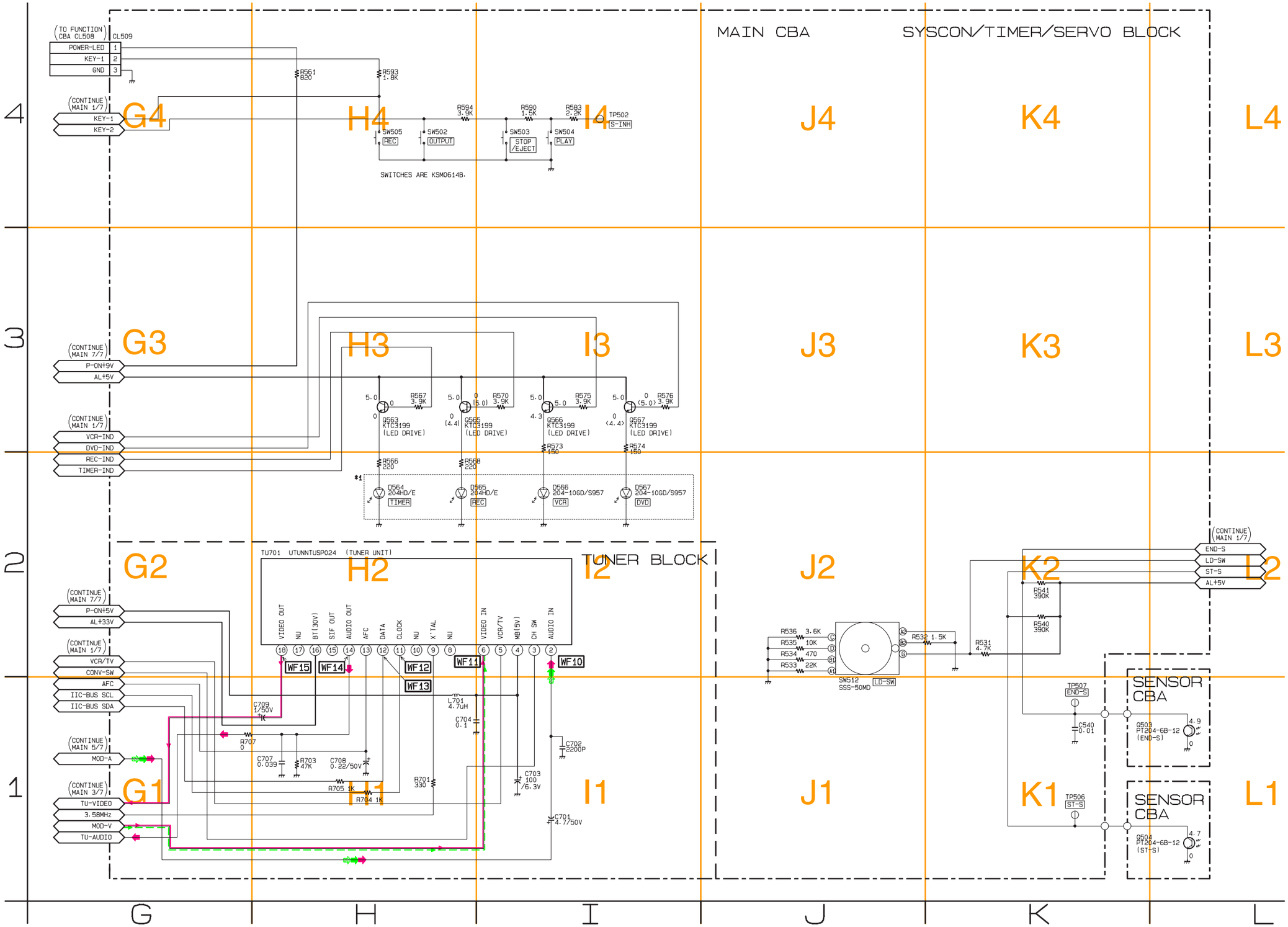
Main 2/7 Schematic Diagram < VCR Section >

*1 **Note:**
When it is necessary to replace one or more of the following Diodes, all four should be replaced: D564, D565, D566, D567.

REC VIDEO SIGNAL
REC AUDIO SIGNAL
DVD VIDEO + PB VIDEO SIGANL
PB AUDIO SIGNAL
DVD AUDIO SIGNAL

MAIN 2/7

Ref No.	Position
TRANSISTORS	
Q563	H-3
Q565	H-3
Q566	I-3
Q567	I-3
CONNECTOR	
CL509	G-4
TEST POINTS	
TP502	I-4
TP506	K-1
TP507	K-1

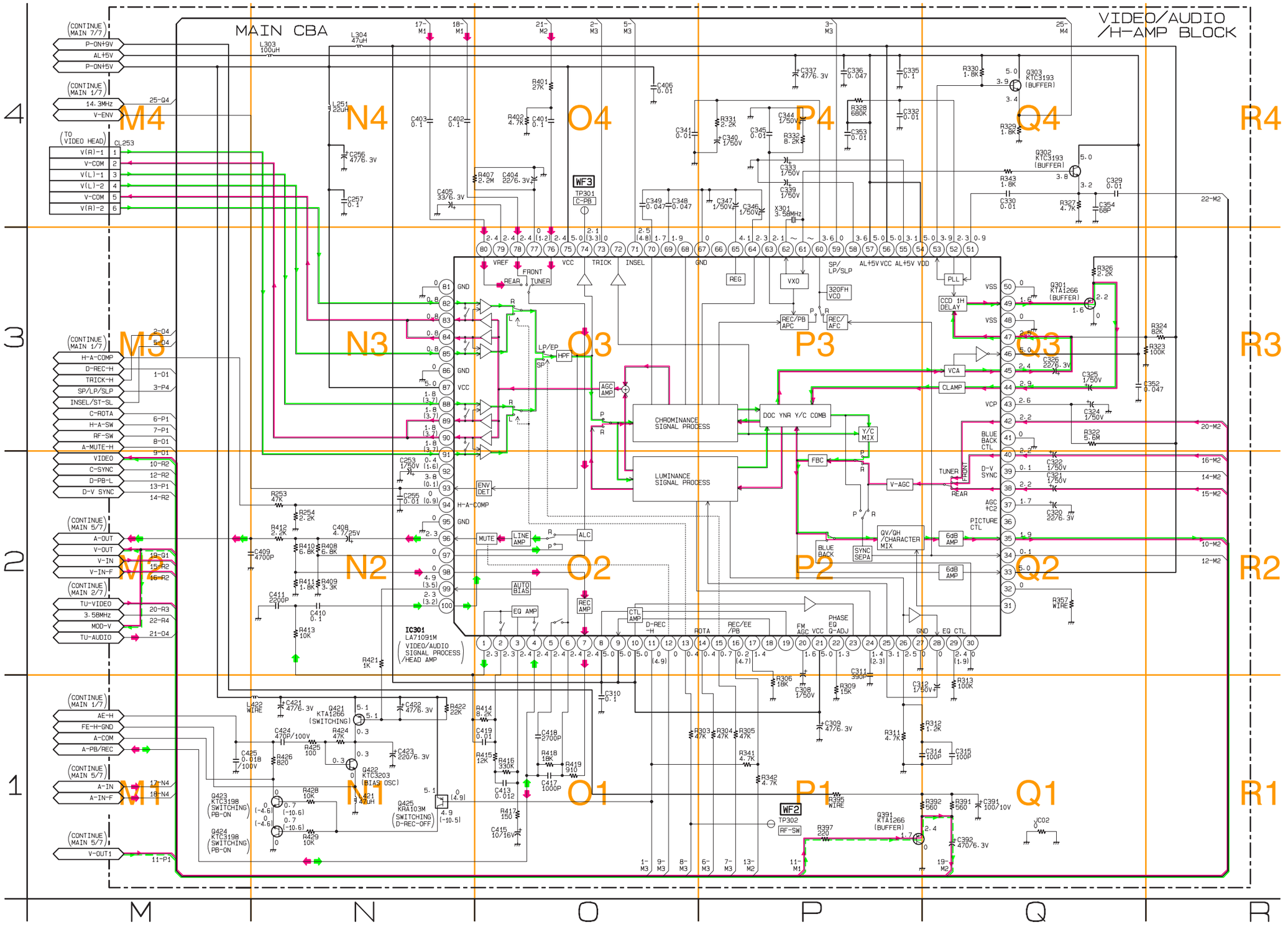


Main 3/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
DVD VIDEO + PB VIDEO SIGNAL
PB AUDIO SIGNAL

MAIN 3/7

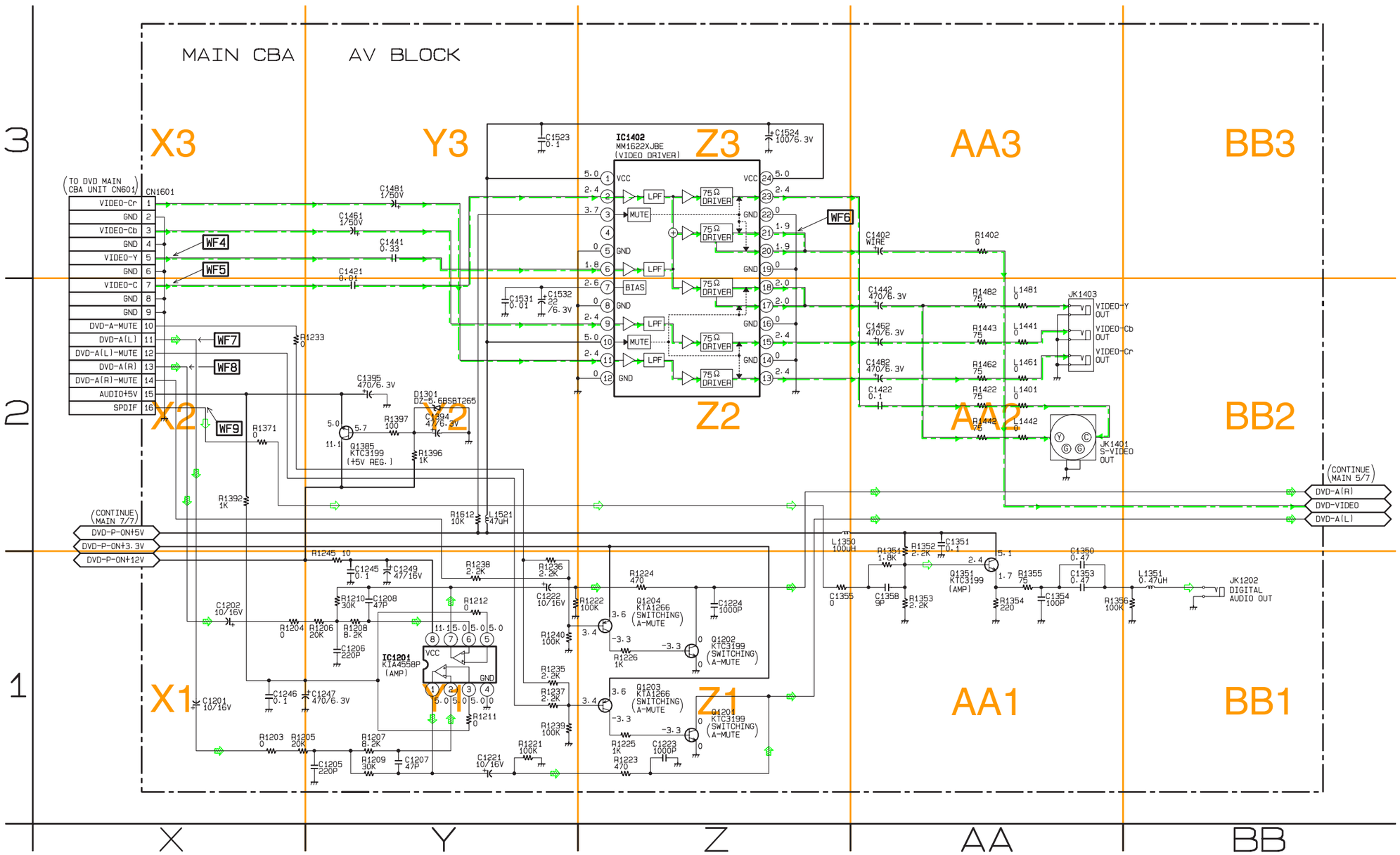
Ref No.	Position
IC	
IC301	N-2
TRANSISTORS	
Q301	Q-3
Q302	Q-4
Q303	Q-4
Q391	P-1
Q421	N-1
Q422	N-1
Q423	N-1
Q424	N-1
Q425	N-1
CONNECTOR	
CL253	M-4
TEST POINTS	
TP301	O-4
TP302	P-1



Main 4/7 Schematic Diagram < VCR Section >

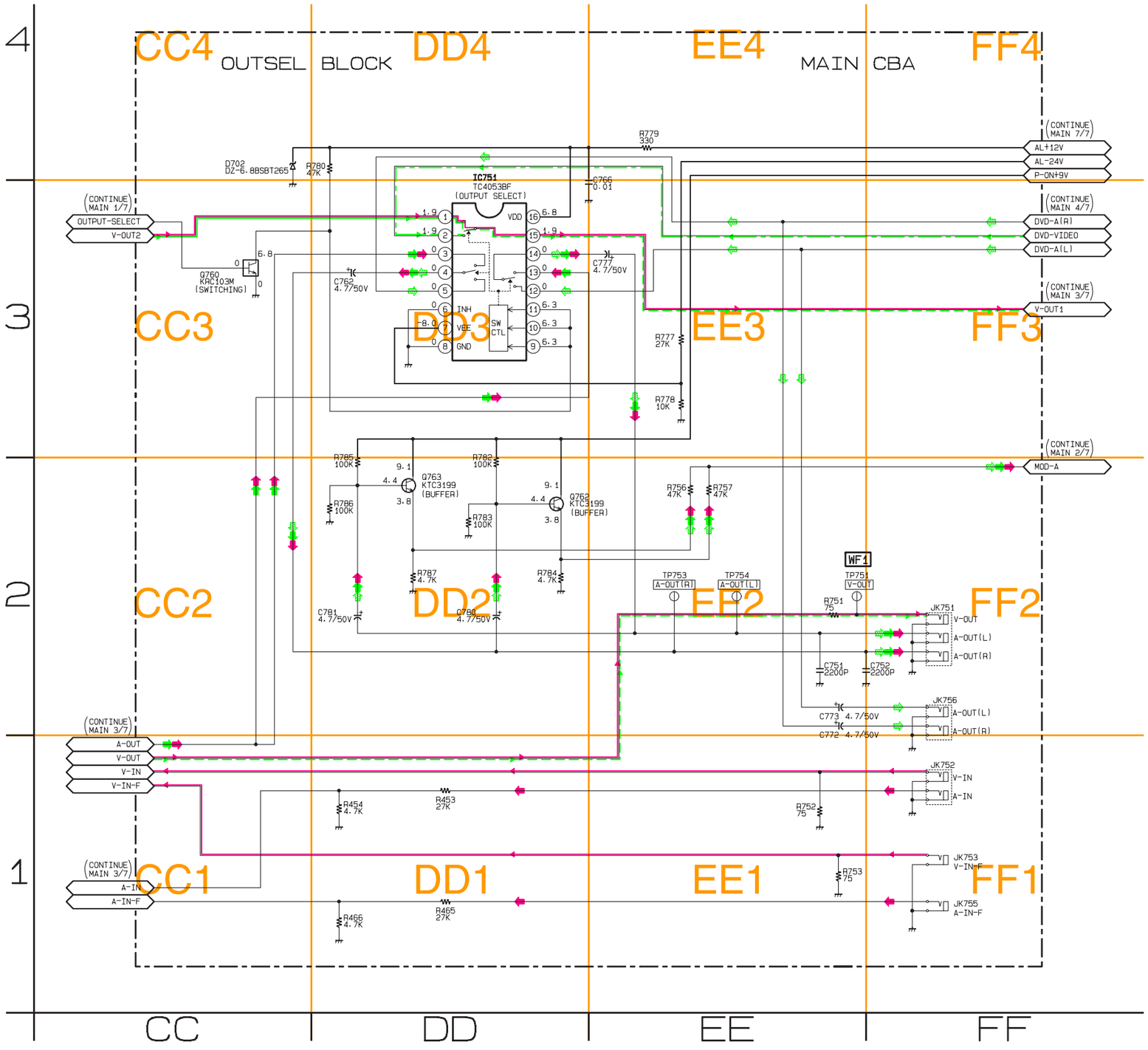
MAIN 4/7

Ref No.	Position
ICS	
IC1201	Y-1
IC1402	Z-3
TRANSISTORS	
Q1201	Z-1
Q1202	Z-1
Q1203	Z-1
Q1204	Z-1
Q1351	AA-1
Q1385	Y-2
CONNECTOR	
CN1601	X-3



Main 5/7 Schematic Diagram < VCR Section >

REC VIDEO SIGNAL
REC AUDIO SIGNAL
DVD VIDEO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL
DVD AUDIO SIGNAL



MAIN 5/7

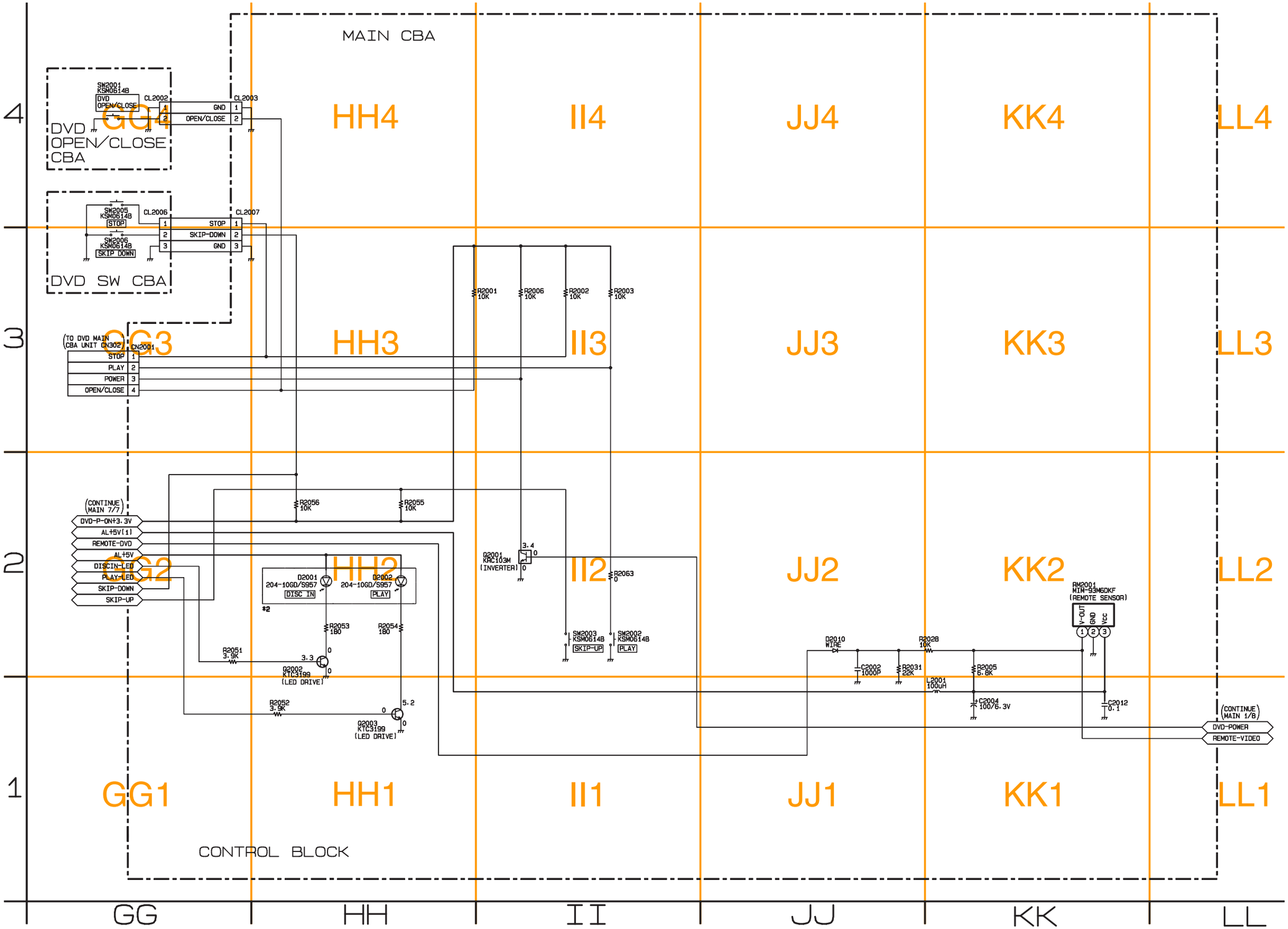
Ref No.	Position
IC	
IC751	DD-3
TRANSISTORS	
Q760	CC-3
Q762	DD-2
Q763	DD-2
TEST POINTS	
TP751	EE-2
TP753	EE-2
TP754	EE-2

Main 6/7 Schematic Diagram < VCR Section >

★2 Note:
When it is necessary to replace one or more of the following Diodes, all two should be replaced: D2001, D2002.

MAIN 6/7

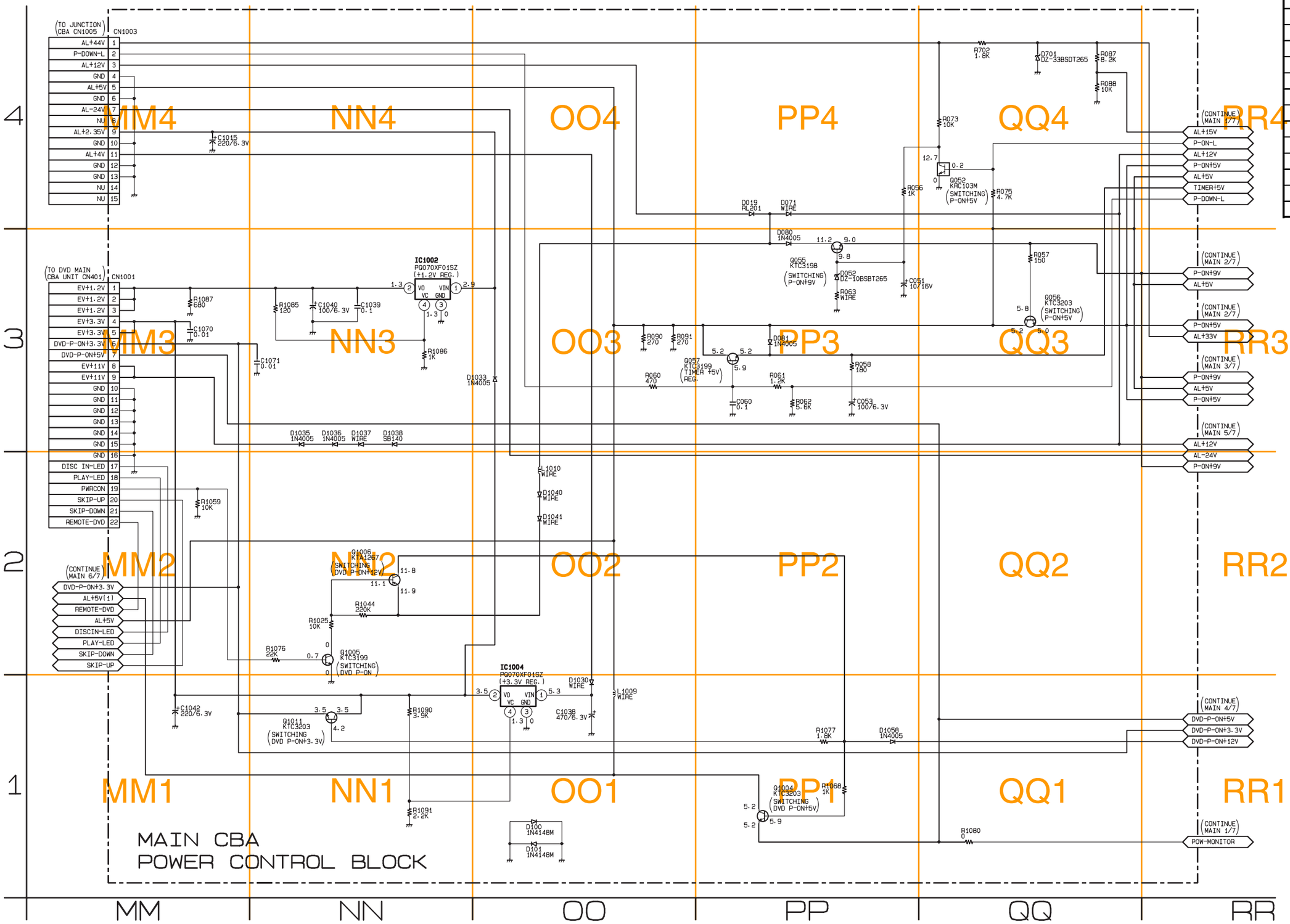
Ref No.	Position
TRANSISTORS	
Q2001	II-2
Q2002	HH-2
Q2003	HH-1
CONNECTORS	
CL2003	GG-4
CL2007	GG-4
CN2001	GG-3



Main 7/7 Schematic Diagram < VCR Section >

MAIN 7/7

Ref No.	Position
ICS	
IC1002	NN-3
IC1004	OO-1
TRANSISTORS	
Q052	QQ-4
Q055	PP-3
Q056	QQ-3
Q057	PP-3
Q1004	PP-1
Q1005	NN-2
Q1006	NN-2
Q1011	NN-1
CONNECTORS	
CN1001	MM-3
CN1003	MM-4



Power Supply Schematic Diagram < VCR Section >

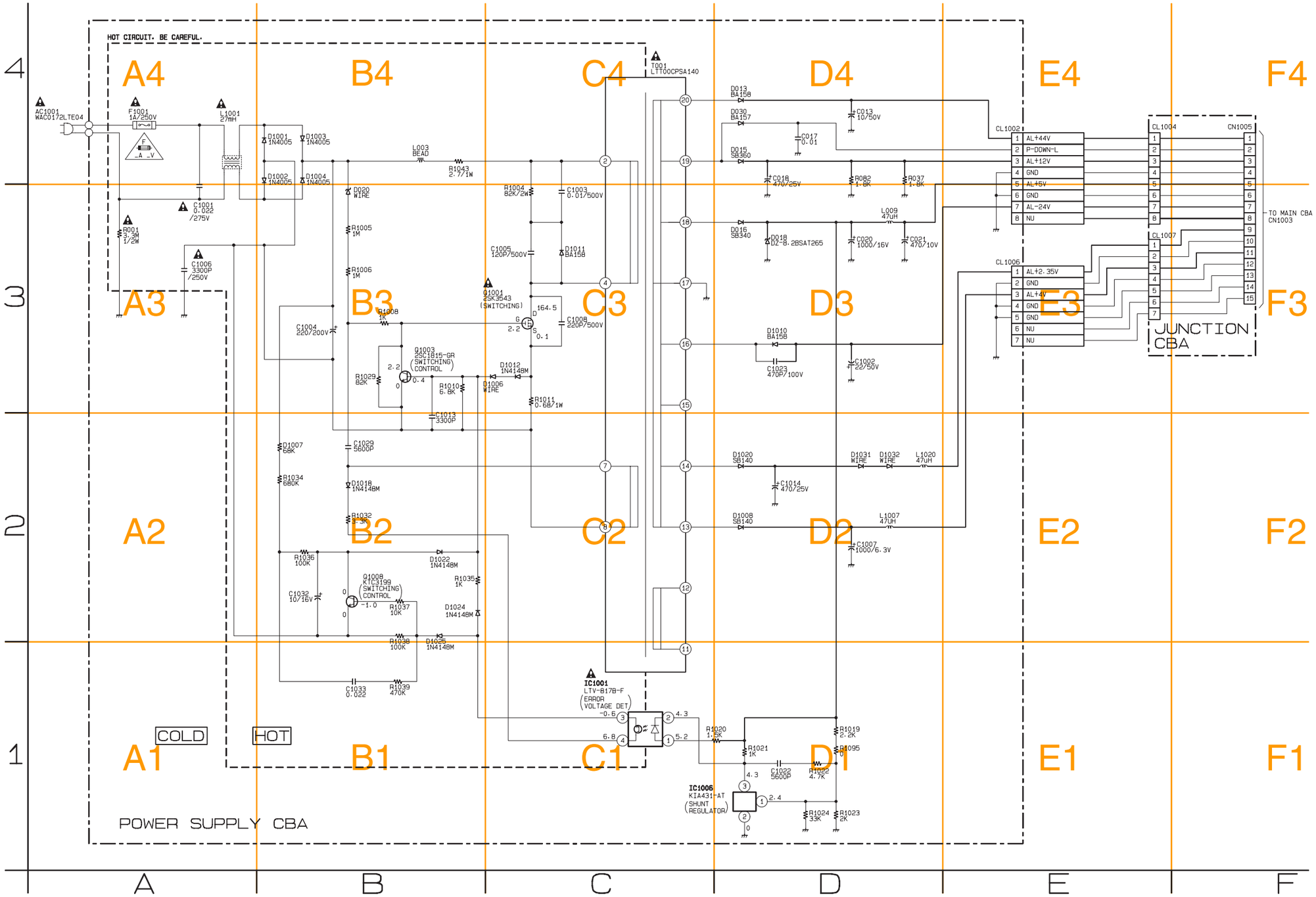
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

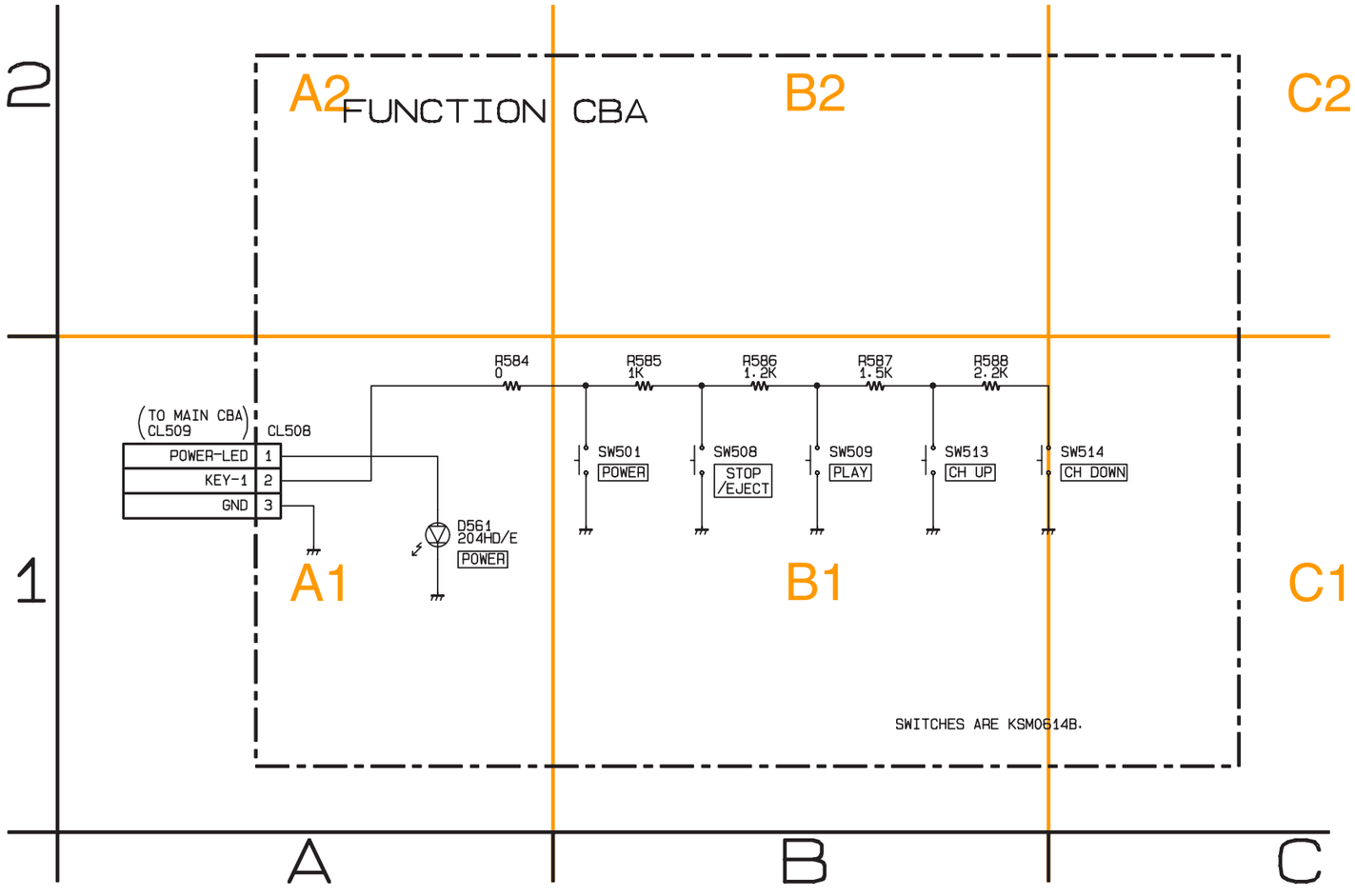
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Power Supply

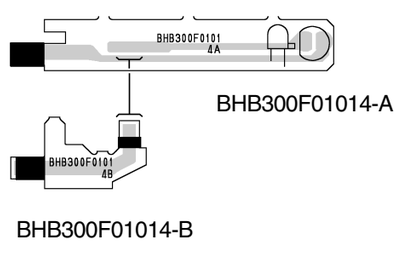
Ref No.	Position
ICS	
IC1001	C-1
IC1006	D-1
TRANSISTORS	
Q1001	C-3
Q1003	B-3
Q1008	B-2
CONNECTORS	
CL1002	E-4
CL1006	E-3

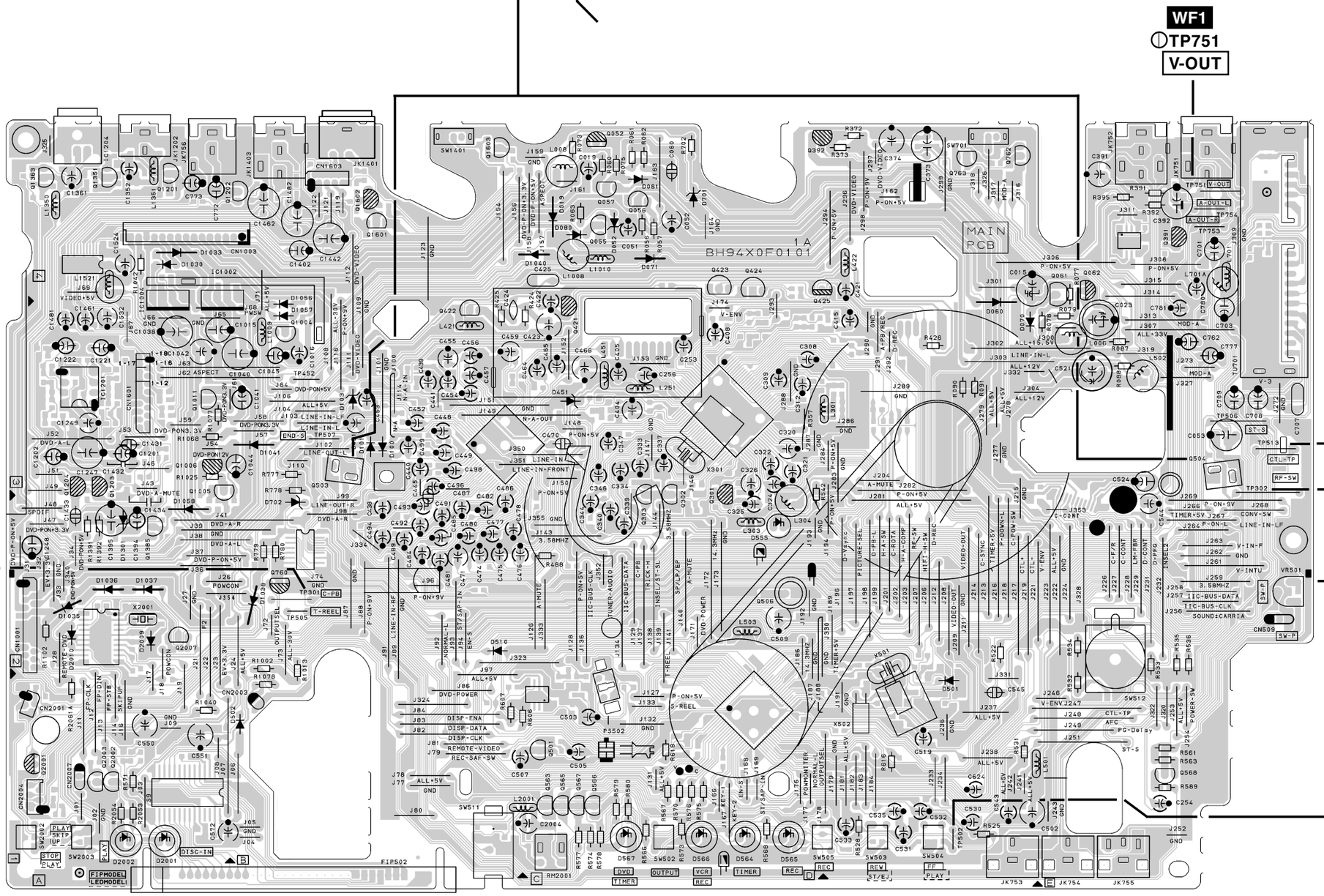



2
1
A2
FUNCTION CBA
B2
C2
A1
B1
C1
A
B
C
R584
0
R585
1K
R586
1.2K
R587
1.5K
R588
2.2K
(TO MAIN CBA
CL509
CL508
POWER-LED 1
KEY-1 2
GND 3
D561
204HD/E
POWER
SW501
POWER
SW508
STOP
/EJECT
SW509
PLAY
SW513
CH UP
SW514
CH DOWN
SWITCHES ARE KSM0614B.

Main CBA Top View

Sensor CBA Top View

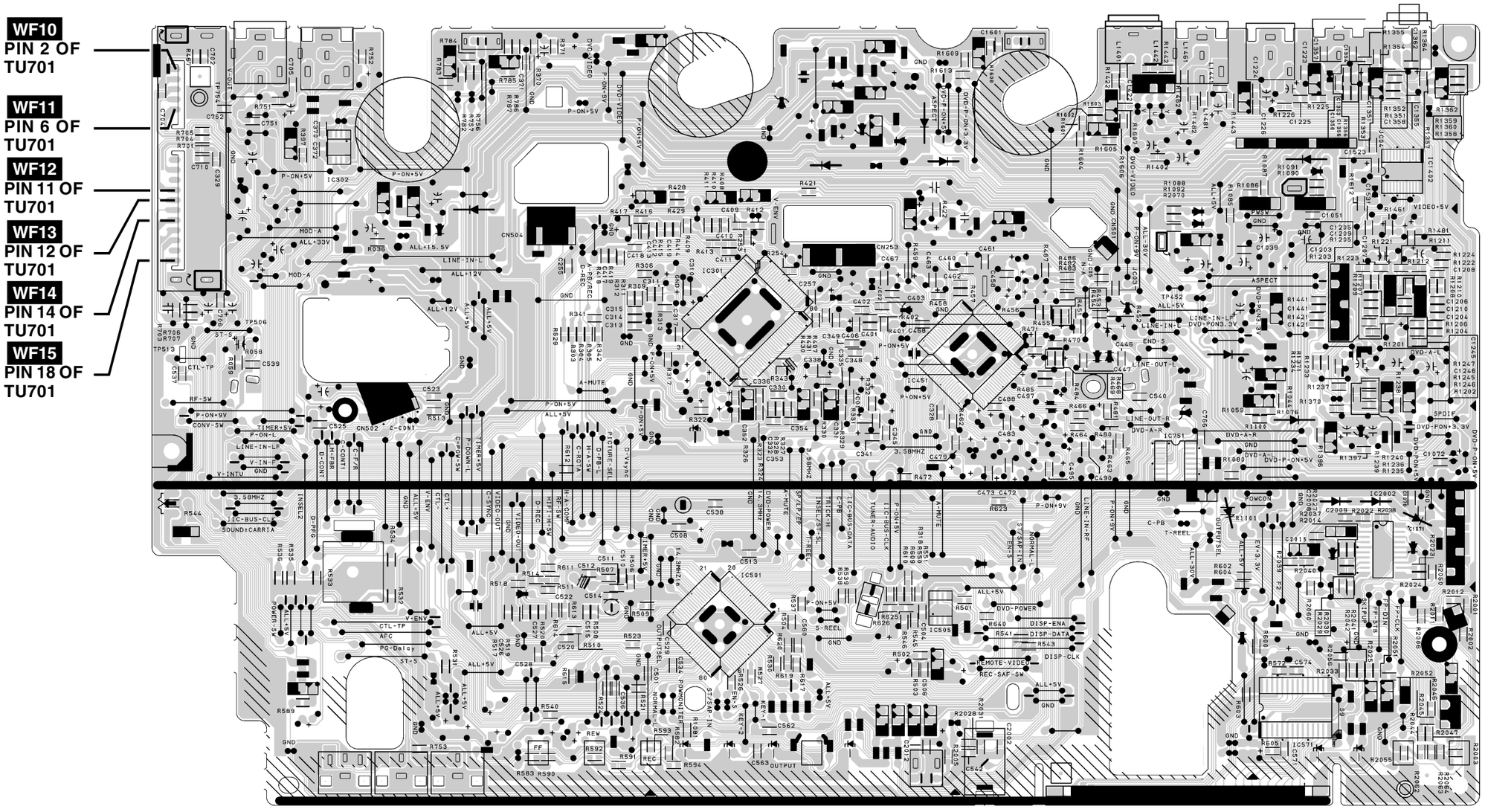




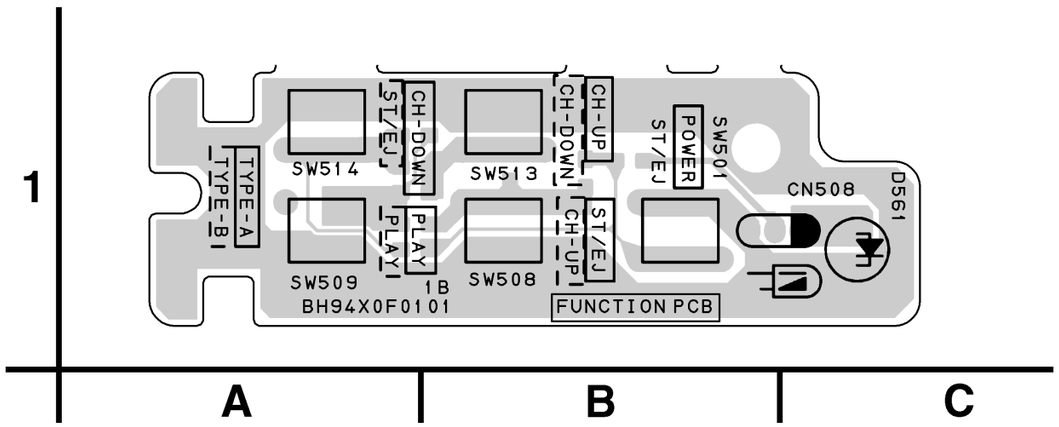
Main CBA Bottom View

MAIN CBA

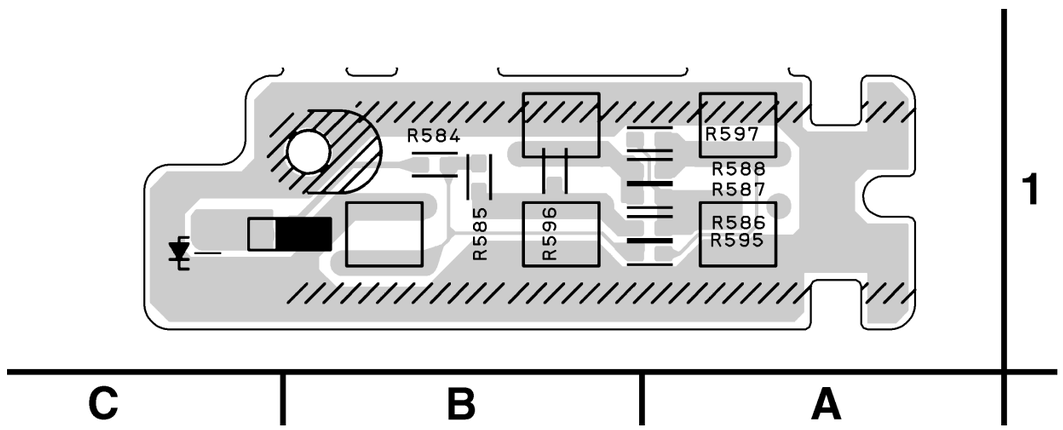
Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS		TRANSISTORS		TRANSISTORS		CONNECTORS		TEST POINTS	
IC301	C-3	Q057	C-4	Q565	C-1	Q1204	A-2	CL2007	A-1	TP506	E-3
IC451	C-3	Q301	C-2	Q566	C-1	Q1351	A-4	CN1001	A-2	TP507	B-3
IC501	C-2	Q302	C-2	Q567	C-1	Q1385	A-2	CN1003	A-4	TP513	E-3
IC571	A-1	Q303	C-2	Q760	B-2	Q2001	A-1	CN1601	A-3	TP751	E-4
IC751	B-2	Q391	E-4	Q762	D-4	Q2002	A-1	CN2001	A-1	TP753	E-4
IC1002	A-4	Q421	C-3	Q763	D-4	Q2003	A-1	VARIABLE RESISTORS		TP754	E-4
IC1004	A-3	Q422	B-3	Q1004	B-3	CONNECTORS		VR501	E-2		
IC1201	A-3	Q423	C-4	Q1005	A-3	CL253	C-3	TEST POINTS			
IC1402	A-4	Q424	C-4	Q1006	A-3	CL501	B-3	TP301	B-2		
TRANSISTORS		Q425	C-4	Q1011	A-3	CL502	E-3	TP302	E-3		
Q052	C-4	Q501	C-1	Q1201	A-4	CL504	D-3	TP452	B-3		
Q055	C-4	Q506	C-2	Q1202	B-4	CL509	E-3	TP502	D-1		
Q056	C-4	Q563	C-1	Q1203	A-3	CL2003	B-1	TP505	B-2		



Function CBA Top View

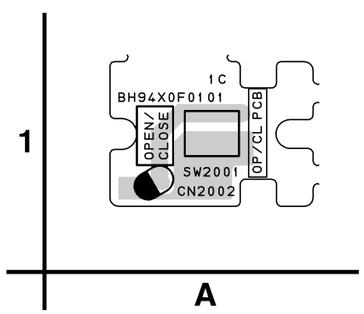


Function CBA Bottom View

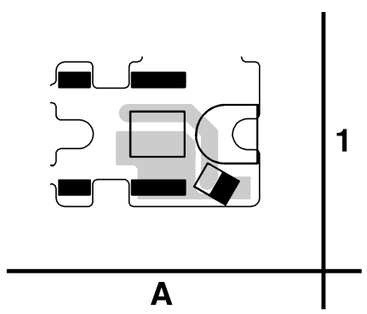


BH94X0F01011B

DVD OPEN/CLOSE CBA Top View

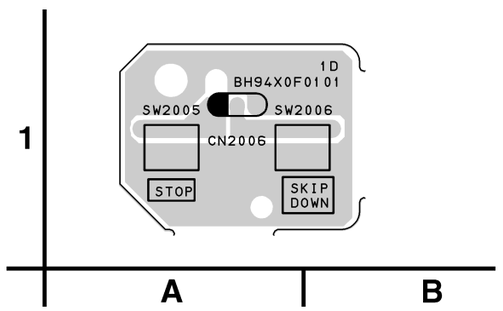


DVD OPEN/CLOSE CBA Bottom View

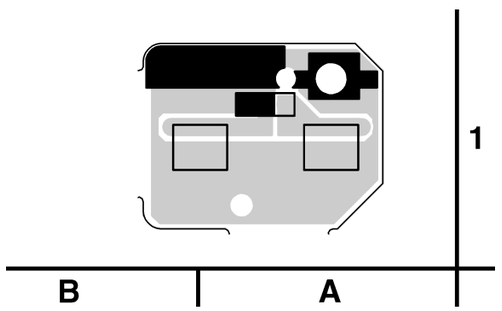


BH94X0F01011C

DVD SW CBA Top View



DVD SW CBA Bottom View



BH94X0F01011D

Power Supply CBA Top View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

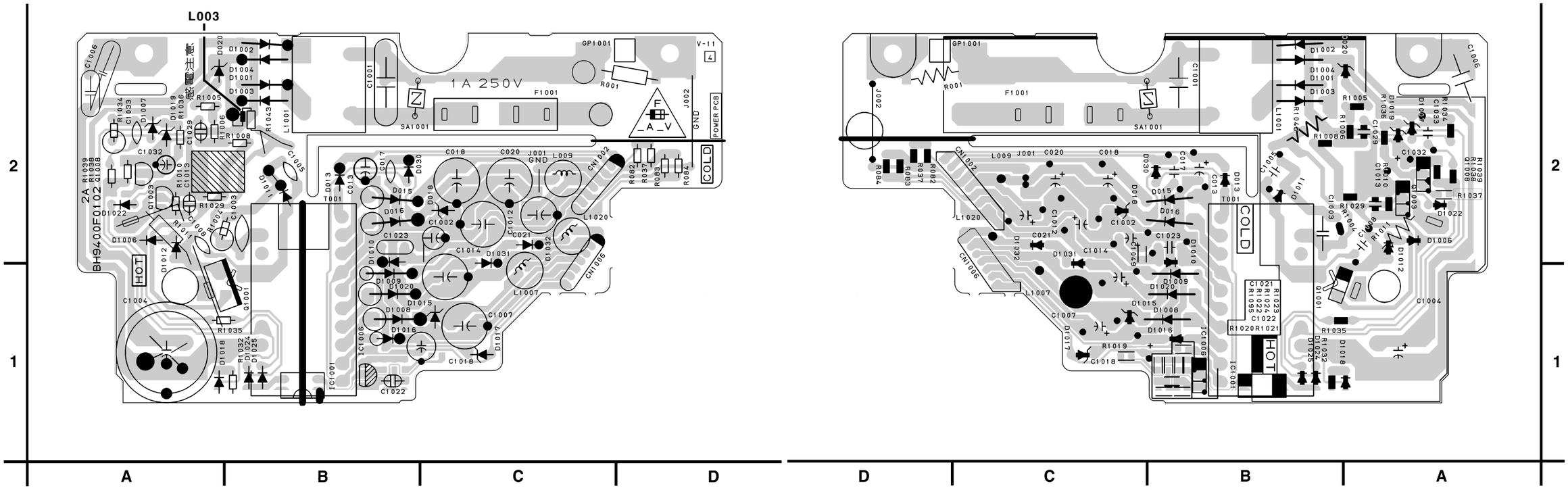
Power Supply CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

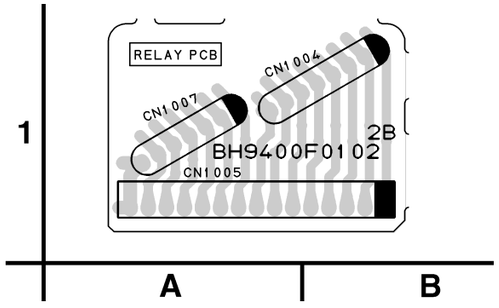
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Power Supply CBA in this S/M.

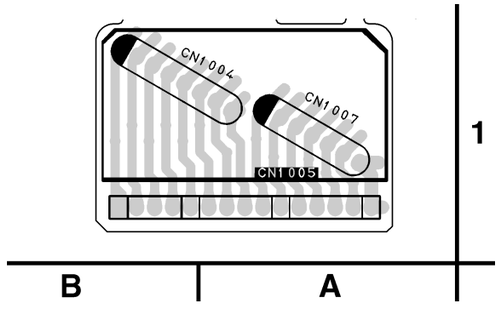


BH9400F01022A

Junction CBA Top View



Junction CBA Bottom View



BH9400F01022B

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Junction CBA in this S/M.

Power Supply CBA

Ref No.	Position
ICS	
IC1001	B-1
IC1006	B-1
TRANSISTORS	
Q1001	B-1
Q1003	A-2
Q1008	A-2
CONNECTORS	
CL1002	C-2
CL1006	C-1

Power Supply CBA Top View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

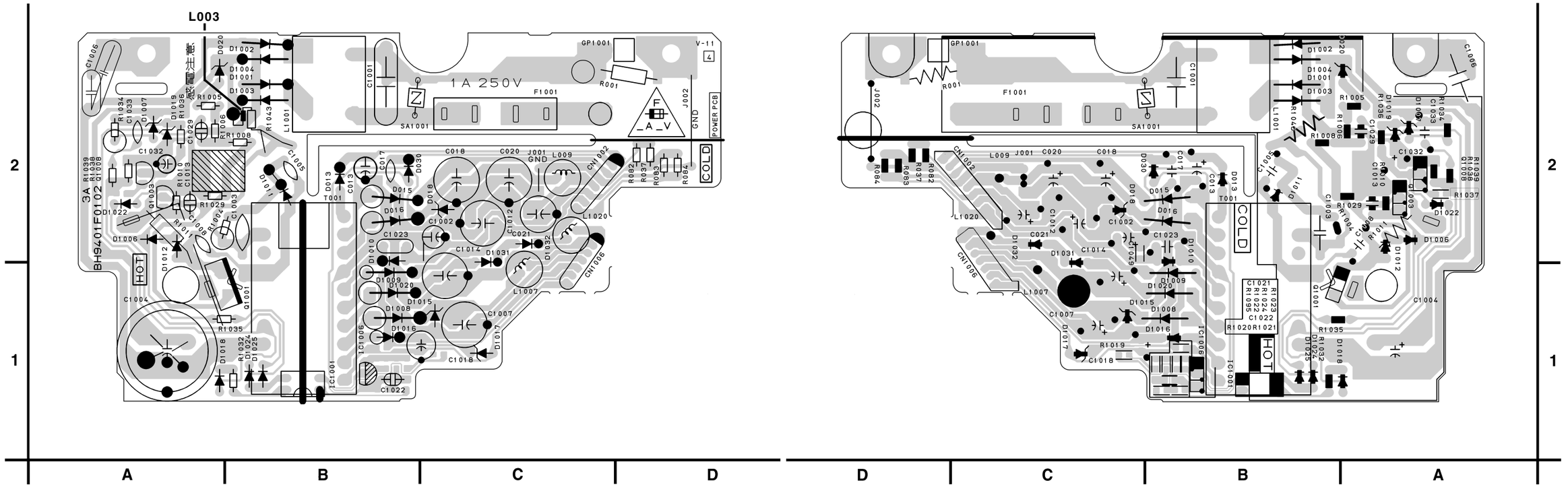
Power Supply CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

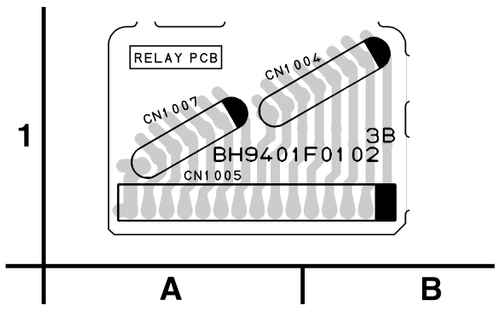
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

NOTE :
Either BH9400F01022, BH9401F01023
is used for the Power Supply CBA in this S/M.

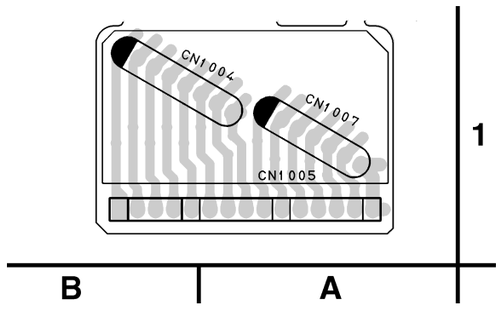


BH9401F01023A

Junction CBA Top View



Junction CBA Bottom View



NOTE :
Either BH9400F01022, BH9401F01023
is used for the Junction CBA in this S/M.

BH9401F01023B

Power Supply CBA

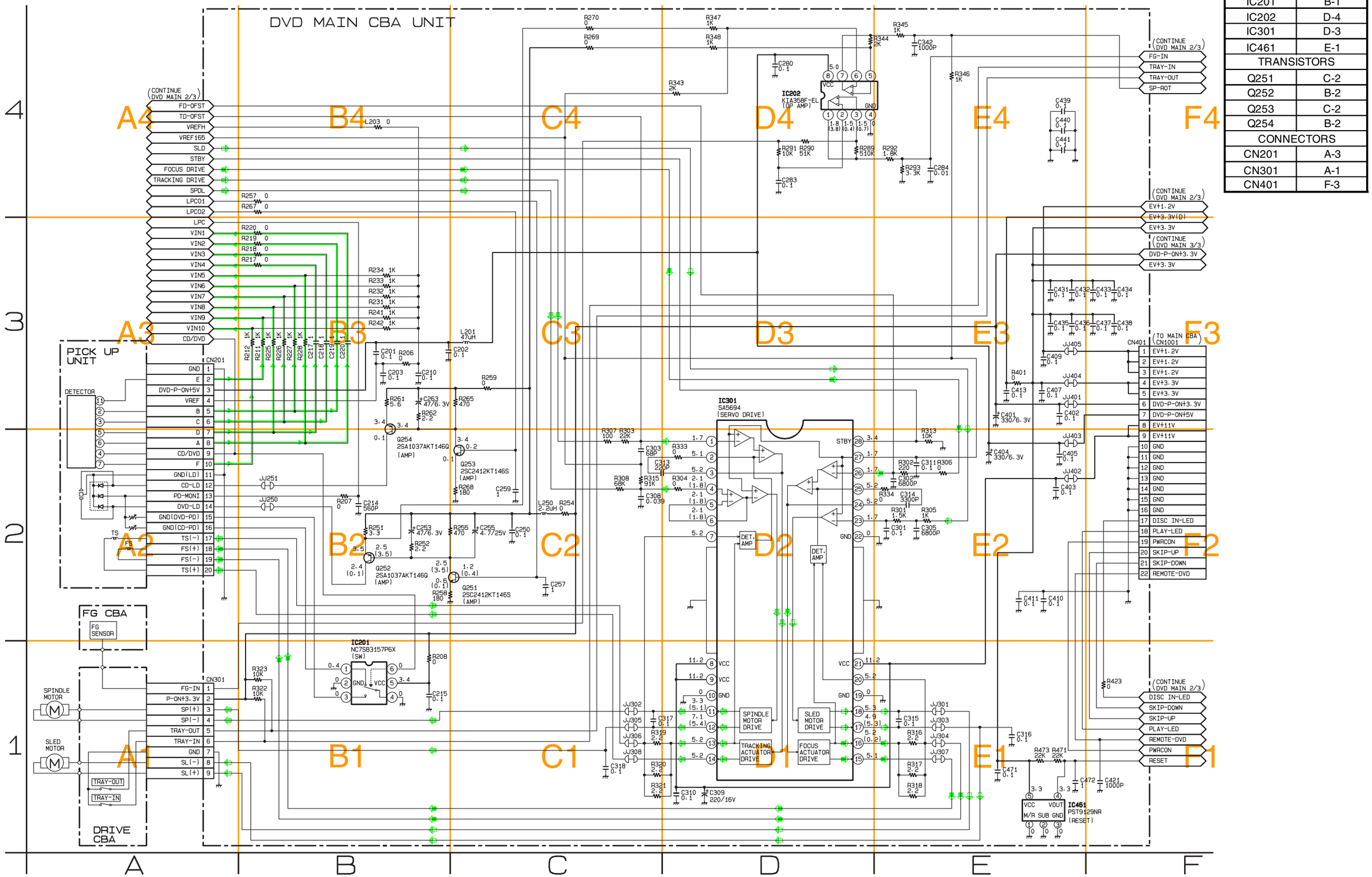
Ref No.	Position
ICS	
IC1001	B-1
IC1006	B-1
TRANSISTORS	
Q1001	B-1
Q1003	A-2
Q1008	A-2
CONNECTORS	
CL1002	C-2
CL1006	C-1

DVD Main 1/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)
TRACKING SERVO SIGNAL
SLIDE SERVO SIGNAL
FOCUS SERVO SIGNAL
SPINDLE SERVO SIGNAL

DVD MAIN 1/3

Ref No.	Position
ICS	
IC201	B-1
IC202	D-4
IC301	D-3
IC461	E-1
TRANSISTORS	
Q251	C-2
Q252	B-2
Q253	C-2
Q254	B-2
CONNECTORS	
CN201	A-3
CN301	A-1
CN401	F-3



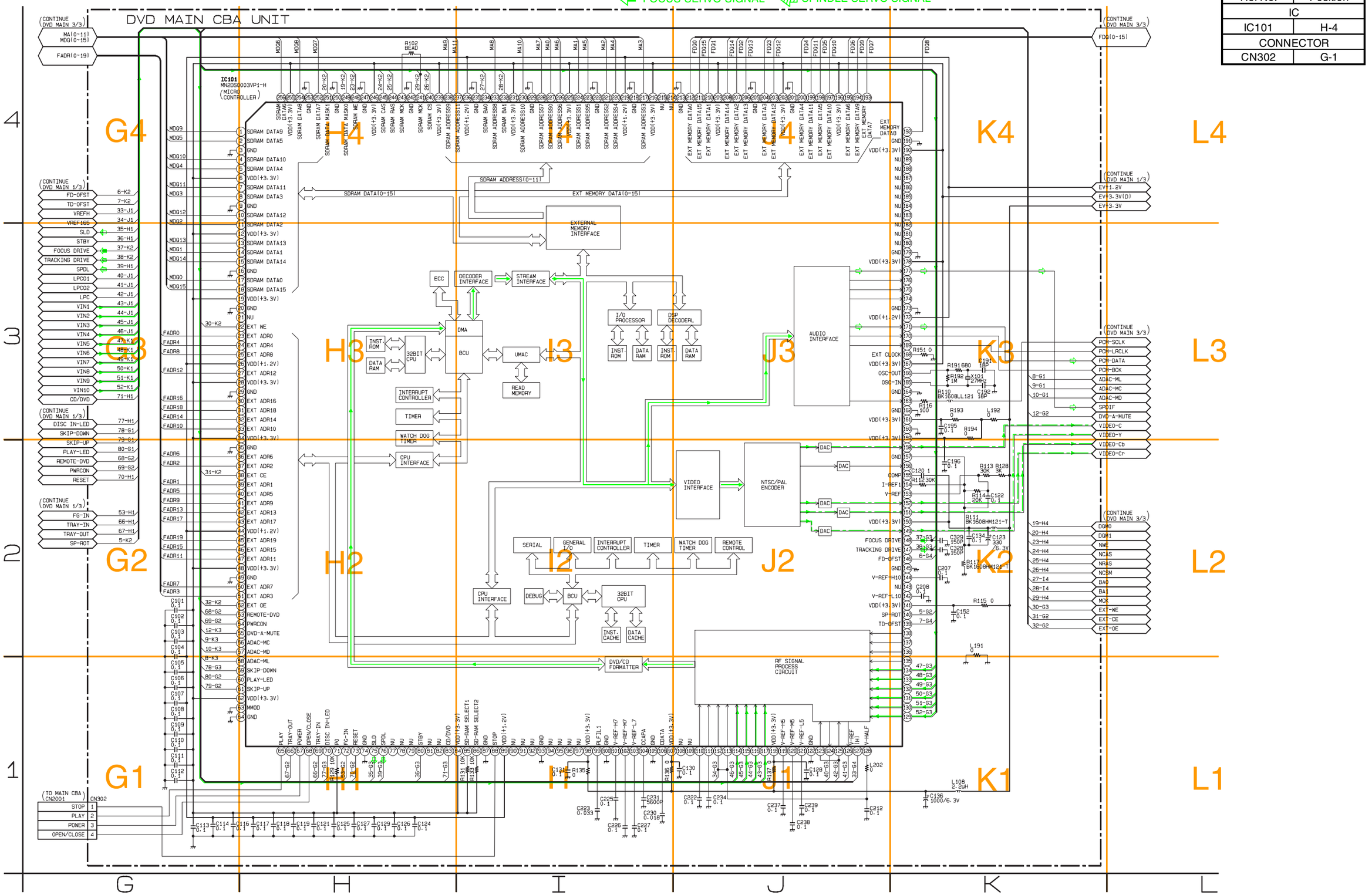
DVD Main 2/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)　TRACKING SERVO SIGNAL　SLIDE SERVO SIGNAL

FOCUS SERVO SIGNAL　SPINDLE SERVO SIGNAL

DVD MAIN 2/3

Ref No.	Position
IC	
IC101	H-4
CONNECTOR	
CN302	G-1



IC101 VOLTAGE CHART

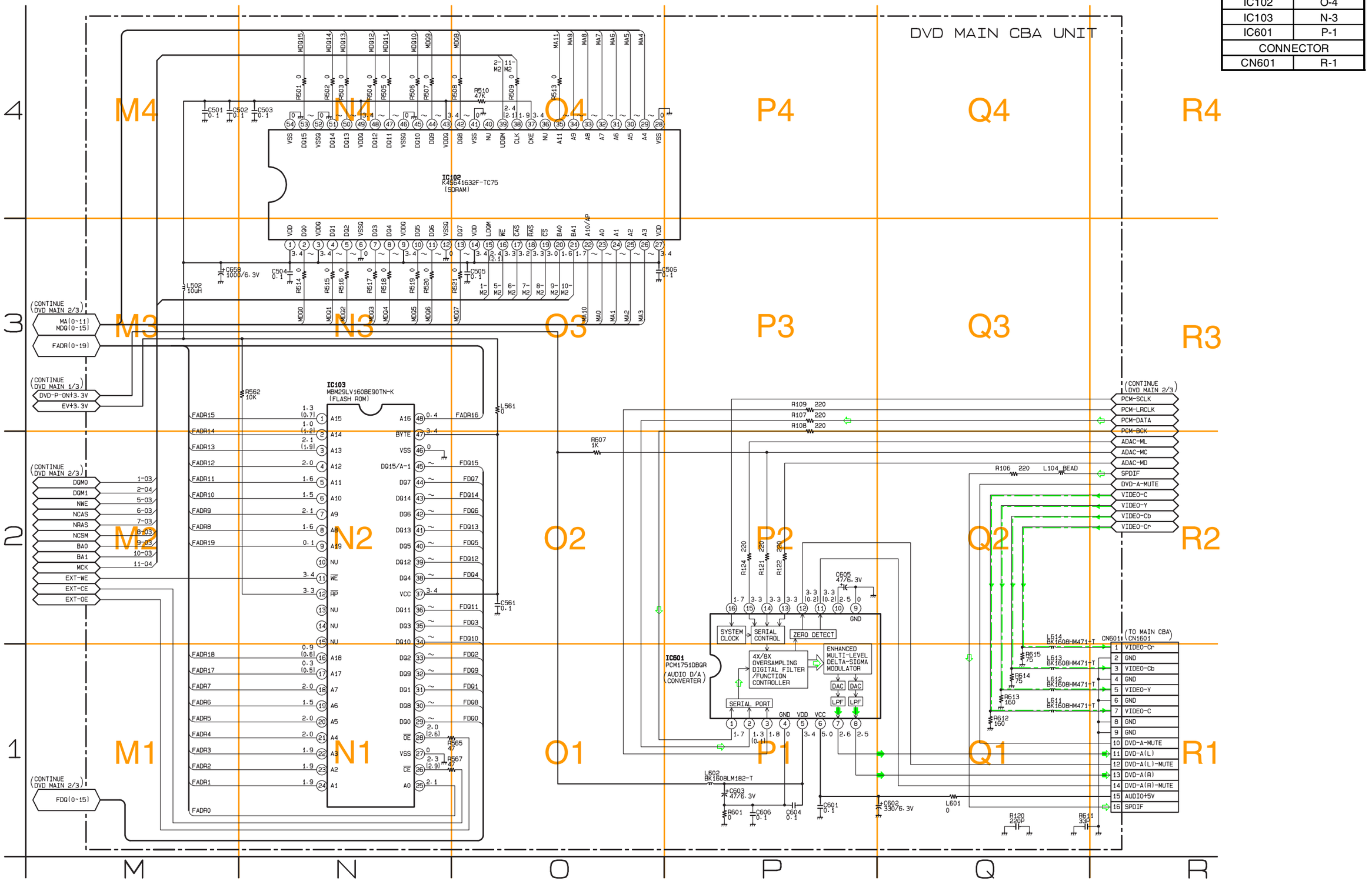
PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	3.3	3.3	97	-----	-----	129	2.3	2.3	161	3.3	3.3	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.4	98	3.3	3.3	130	2.2	2.2	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.3	3.3	99	0.9	0.9	131	2.4	2.4	163	1.6	1.6	195	~	~	227	~	~
4	~	~	36	~	~	68	3.3	3.3	100	0	0	132	2.4	2.4	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	3.4	3.4	101	1.6	1.6	133	2.4	2.4	165	1.5	1.5	197	~	~	229	0	0
6	3.4	3.4	38	2.2	2.9	70	3.3	3.3	102	2.1	2.1	134	2.4	2.4	166	1.6	1.6	198	~	~	230	~	~
7	~	~	39	~	~	71	0.1	0.1	103	2.6	2.6	135	-----	-----	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.2	2.5	104	0.3	0.3	136	-----	-----	168	0	0	200	~	~	232	1.7	1.7
9	0	0	41	~	~	73	3.4	3.4	105	0	0	137	-----	-----	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.4	1.4	138	-----	-----	170	1.7	1.7	202	3.4	3.4	234	1.6	1.6
11	~	~	43	0.3	0.5	75	1.7	1.7	107	3.3	3.3	139	1.7	1.7	171	1.4	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.4	1.7	108	-----	-----	140	1.9	1.7	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	0.1	0.1	77	-----	-----	109	-----	-----	141	3.3	3.3	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	3.4	3.4	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	-----	-----	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	3.4	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.0	3.0
17	~	~	49	0	0	81	-----	-----	113	1.7	1.7	145	0	0	177	1.7	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	-----	-----	114	2.0	2.0	146	1.7	1.7	178	3.4	3.4	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	2.0	2.0	147	1.7	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	2.0	2.6	84	3.4	3.4	116	2.0	2.0	148	1.7	1.7	180	-----	-----	212	~	~	244	3.3	3.3
21	-----	-----	53	3.1	3.1	85	3.4	3.4	117	2.0	2.0	149	0.7	0.7	181	-----	-----	213	0	0	245	3.2	3.2
22	3.4	3.4	54	3.4	3.4	86	3.4	3.4	118	3.3	3.3	150	3.3	3.3	182	-----	-----	214	-----	-----	246	3.4	3.4
23	~	~	55	3.4	0.1	87	0	0	119	2.0	2.0	151	0.4	0.4	183	-----	-----	215	-----	-----	247	0	0
24	~	~	56	3.4	3.4	88	3.3	3.3	120	1.7	1.7	152	0.4	0.4	184	-----	-----	216	3.4	3.4	248	3.3	3.3
25	~	~	57	3.4	3.4	89	1.3	1.3	121	1.5	1.5	153	1.4	1.4	185	-----	-----	217	~	~	249	2.4	2.1
26	1.3	1.3	58	3.4	3.4	90	-----	-----	122	0	0	154	1.4	1.4	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.4	0.1	155	2.2	2.2	187	-----	-----	219	1.3	1.3	251	2.4	2.1
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.2	0.4	156	-----	-----	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.3	3.3	93	0	0	125	0.4	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	0.4	0.4	62	3.4	3.4	94	-----	-----	126	0.2	0.2	158	0.9	0.9	190	3.4	3.4	222	0	0	254	~	~
31	0.9	0.6	63	0	0	95	-----	-----	127	2.3	2.3	159	3.3	3.3	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >

VIDEO SIGNAL SPINDLE SERVO SIGNAL DATA(AUDIO)

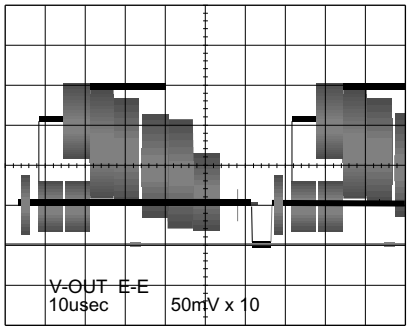
DVD MAIN 3/3

Ref No.	Position
ICS	
IC102	O-4
IC103	N-3
IC601	P-1
CONNECTOR	
CN601	R-1



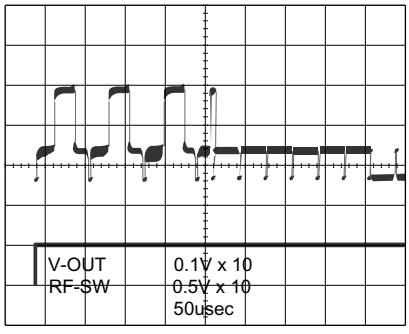
WAVEFORMS

WF 1 (TP751 of Main CBA)



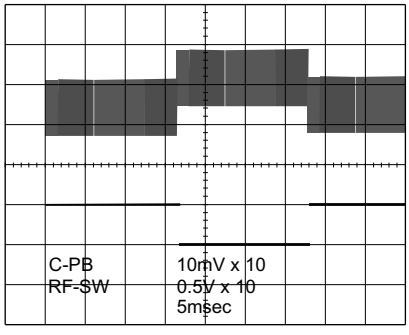
WF1 UPPER (TP751 of Main CBA)

WF2 LOWER (TP302 of Main CBA)

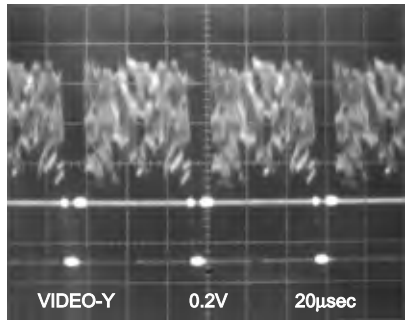


WF3 UPPER (TP301 of Main CBA)

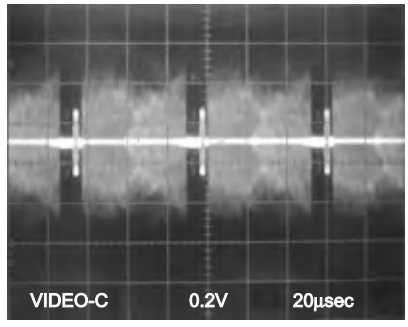
WF2 LOWER (TP302 of Main CBA)



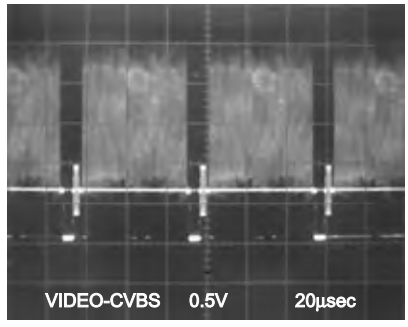
WF4 Pin 5 of CN1601



WF5 Pin 7 of CN1601

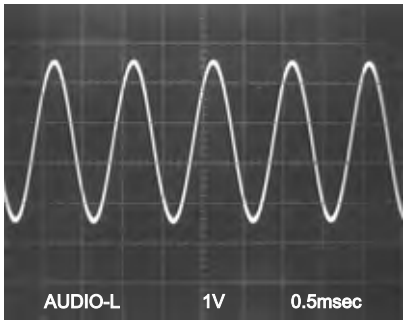


WF6 Pin 21 of IC1402

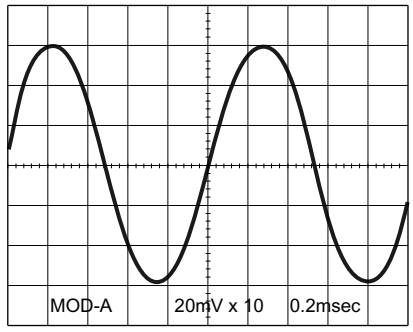


WAVEFORMS

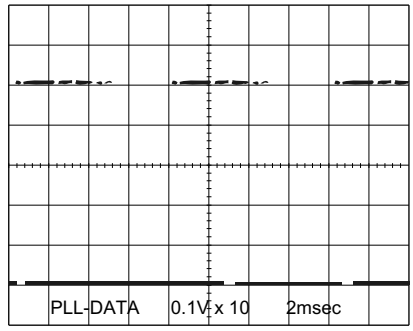
WF7 Pin 11 of CN1601



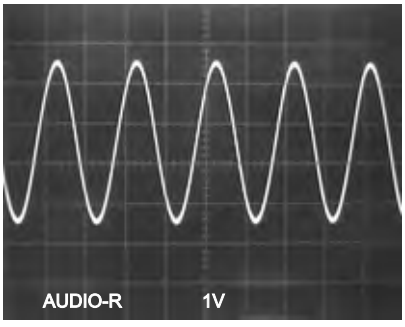
WF10 (Pin 2 of TU701)



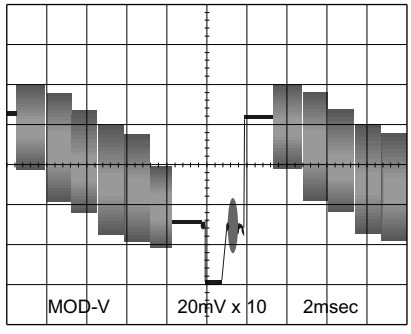
WF13 (Pin 12 of TU701)



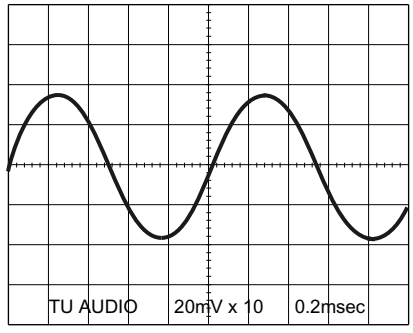
WF8 Pin 13 of CN1601



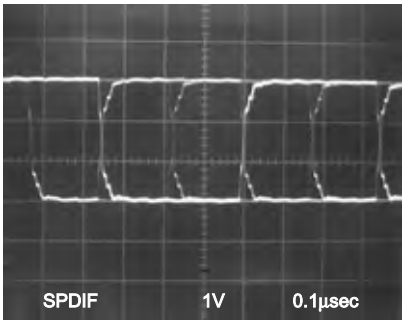
WF11 (Pin 6 of TU701)



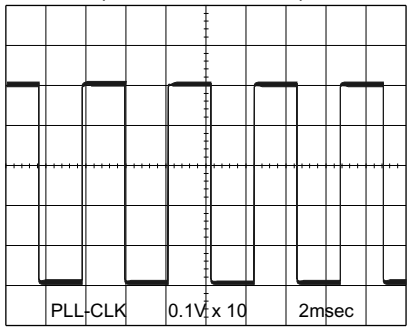
WF14 (Pin 14 of TU701)



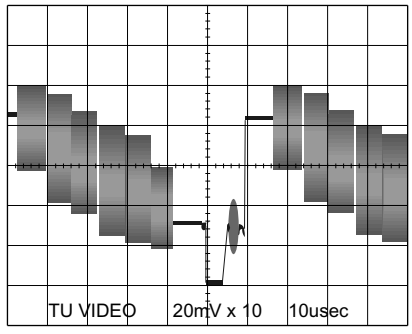
WF9 Pin 16 of CN1601



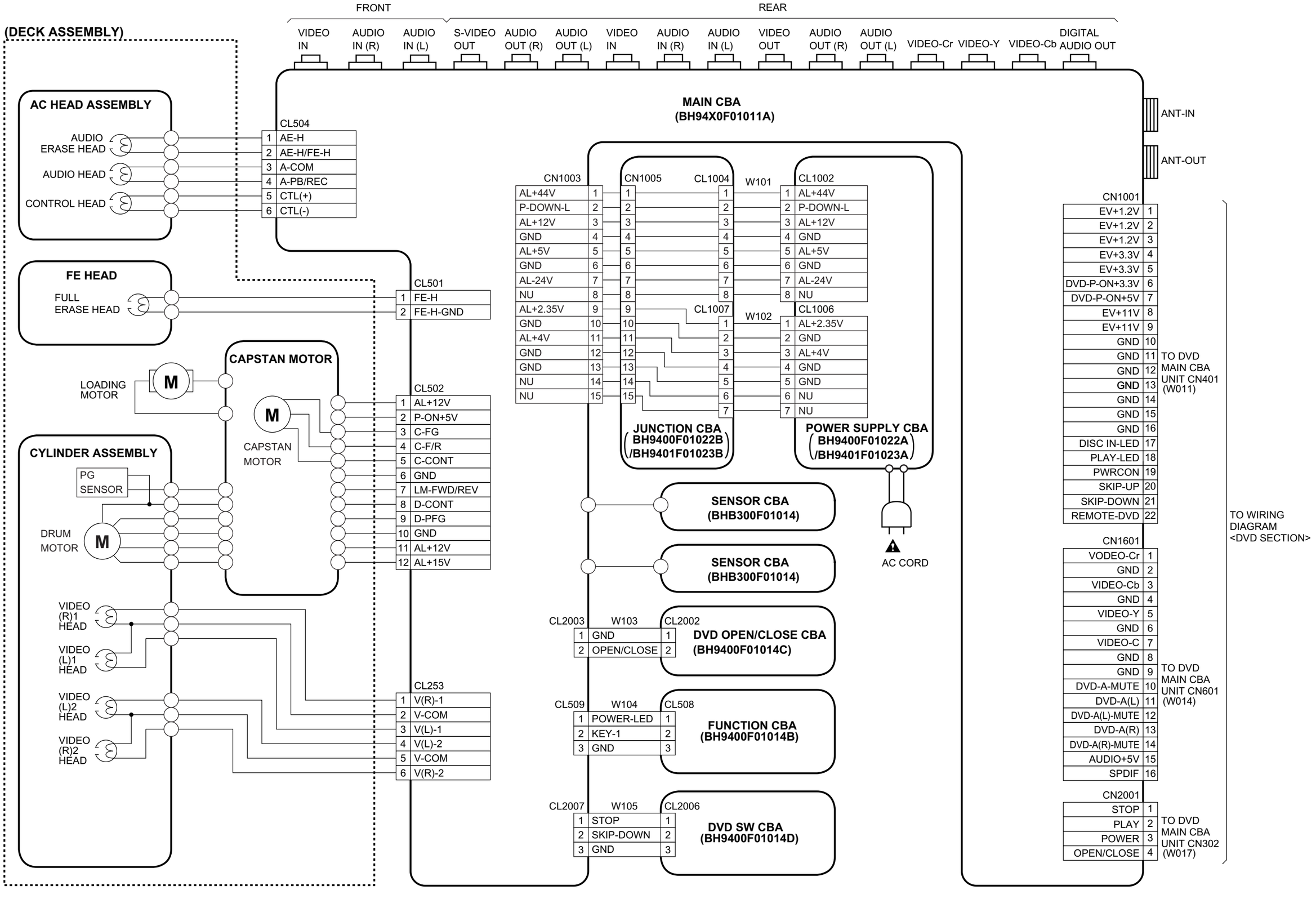
WF12 (Pin 11 of TU701)



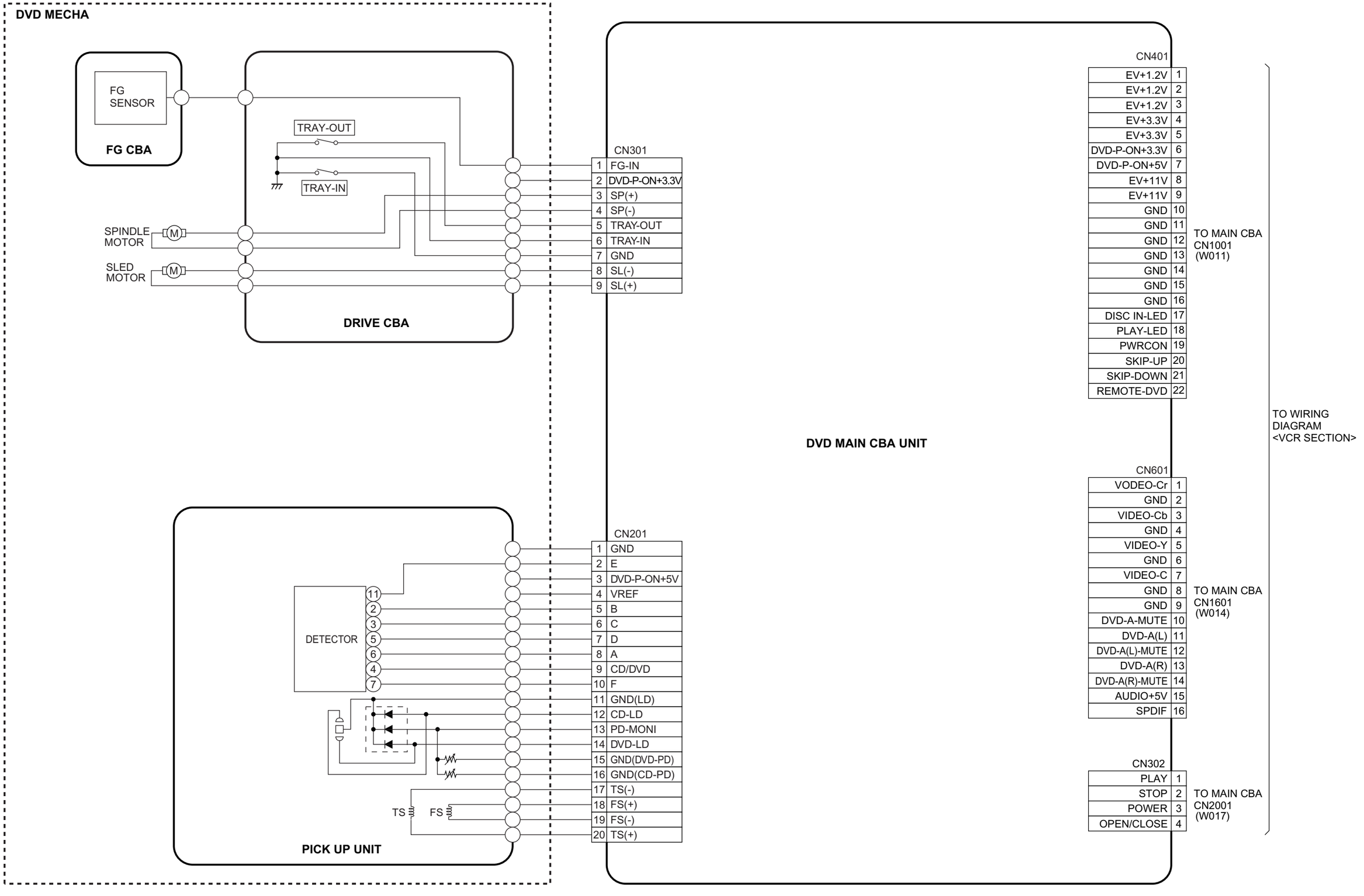
WF15 (Pin 18 of TU701)



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



SYSTEM CONTROL TIMING CHARTS

[VCR Section]

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note:

EJ → RS: Loading FWD (LM-FWD/REV “H”)
RS → EJ: Loading REV (LM-FWD/REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control
Frame Advance Timing Chart

1) SP Mode

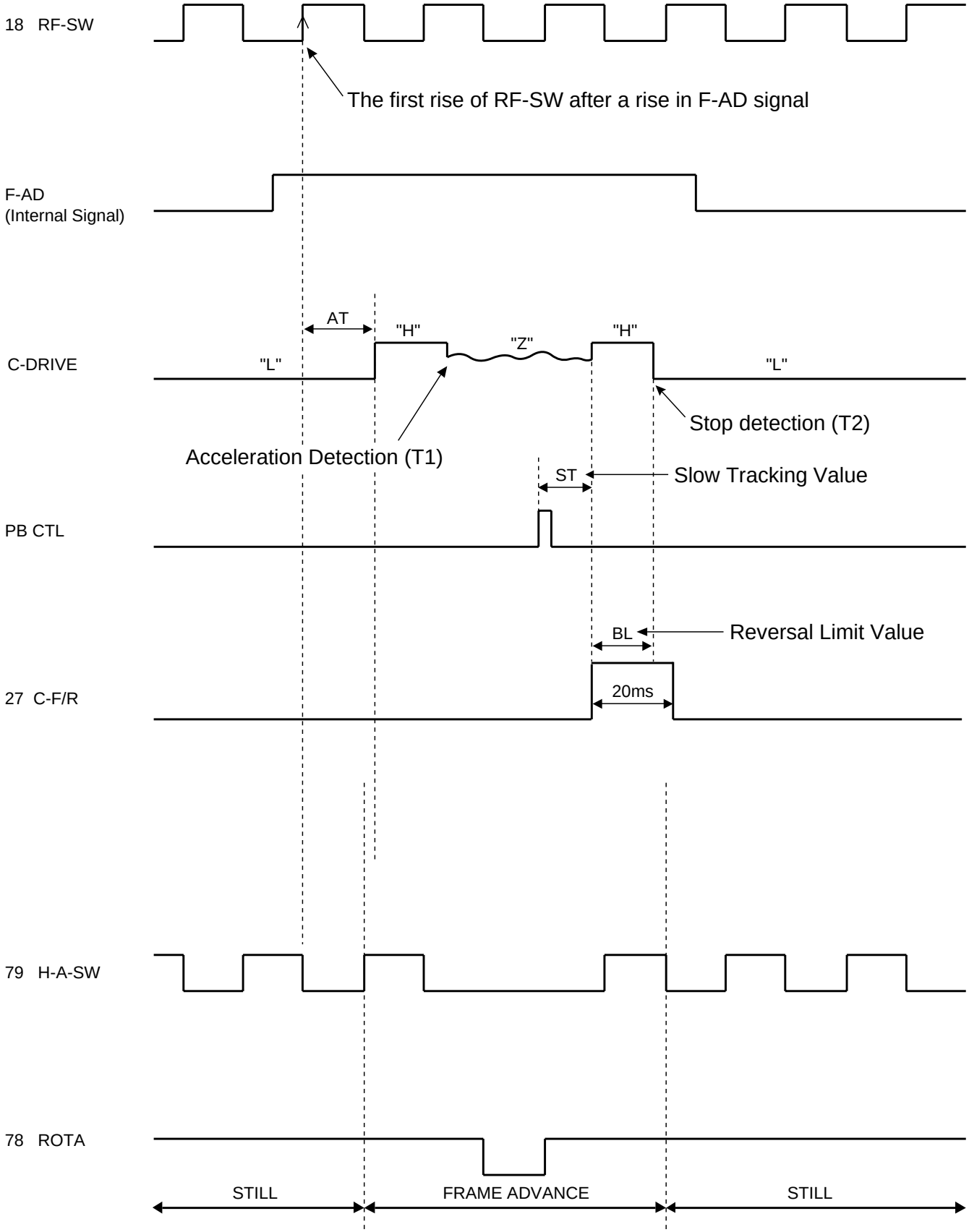


Fig. 1

2) LP/SLP Mode

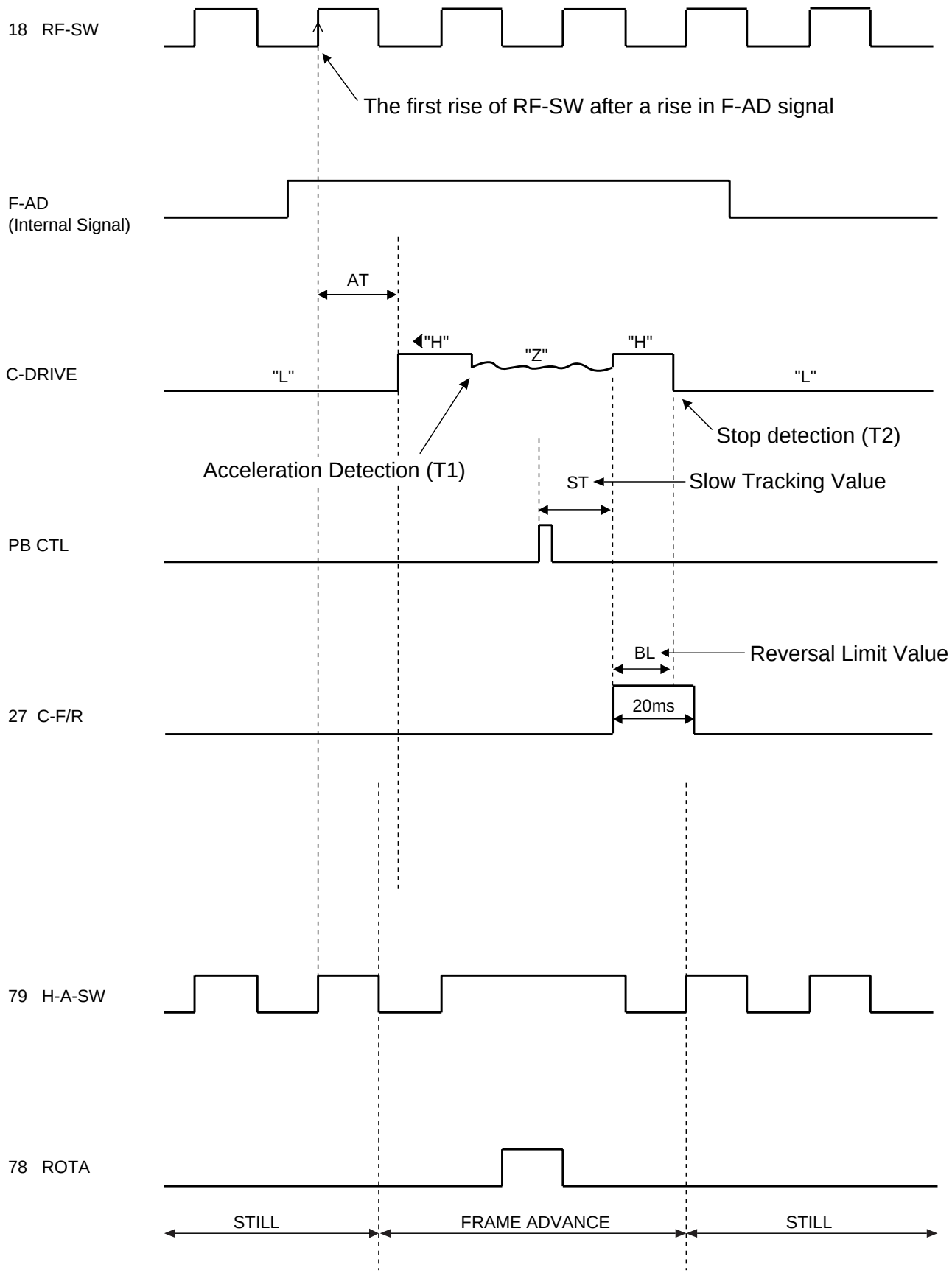


Fig. 2

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

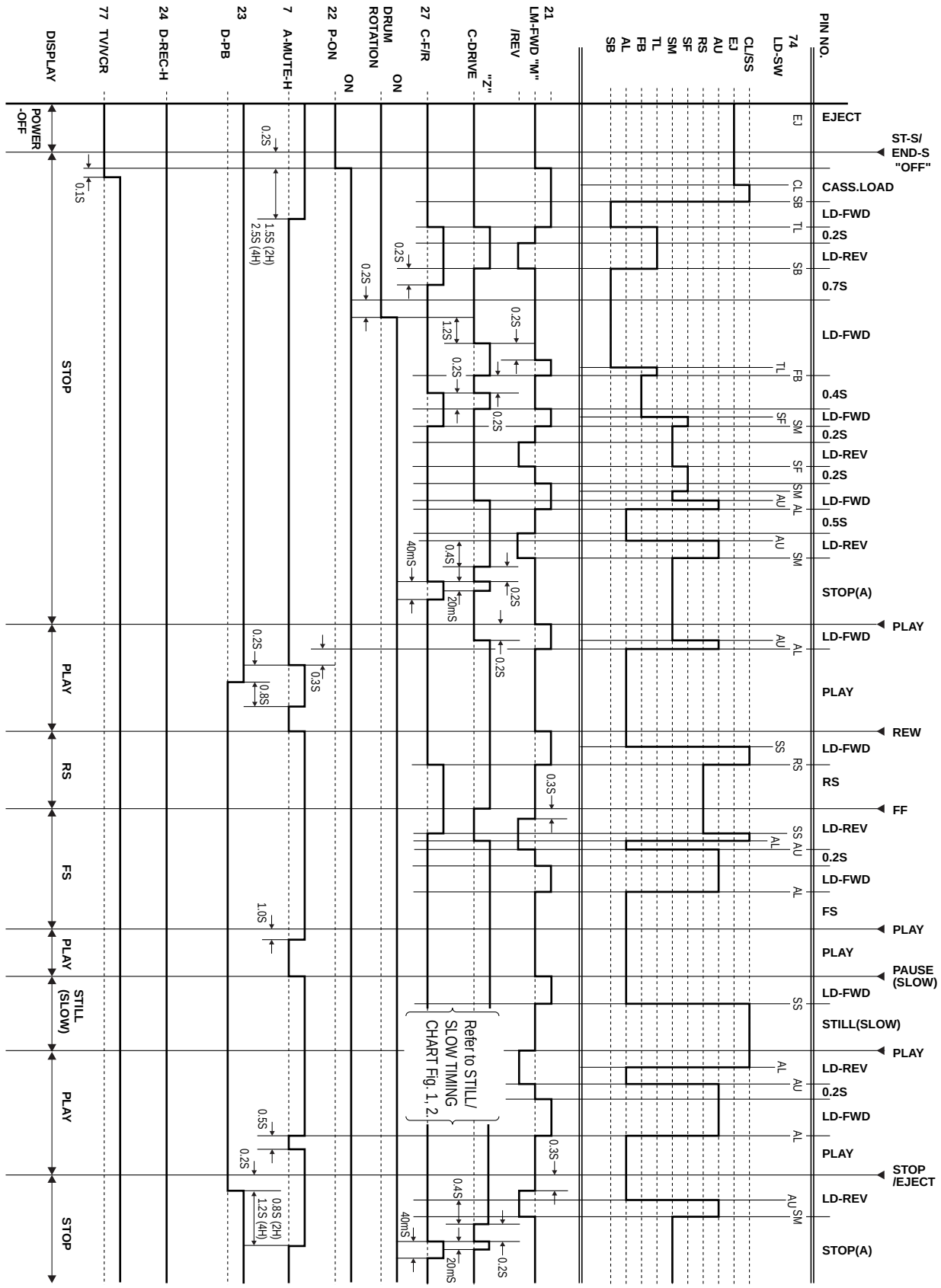


Fig. 3

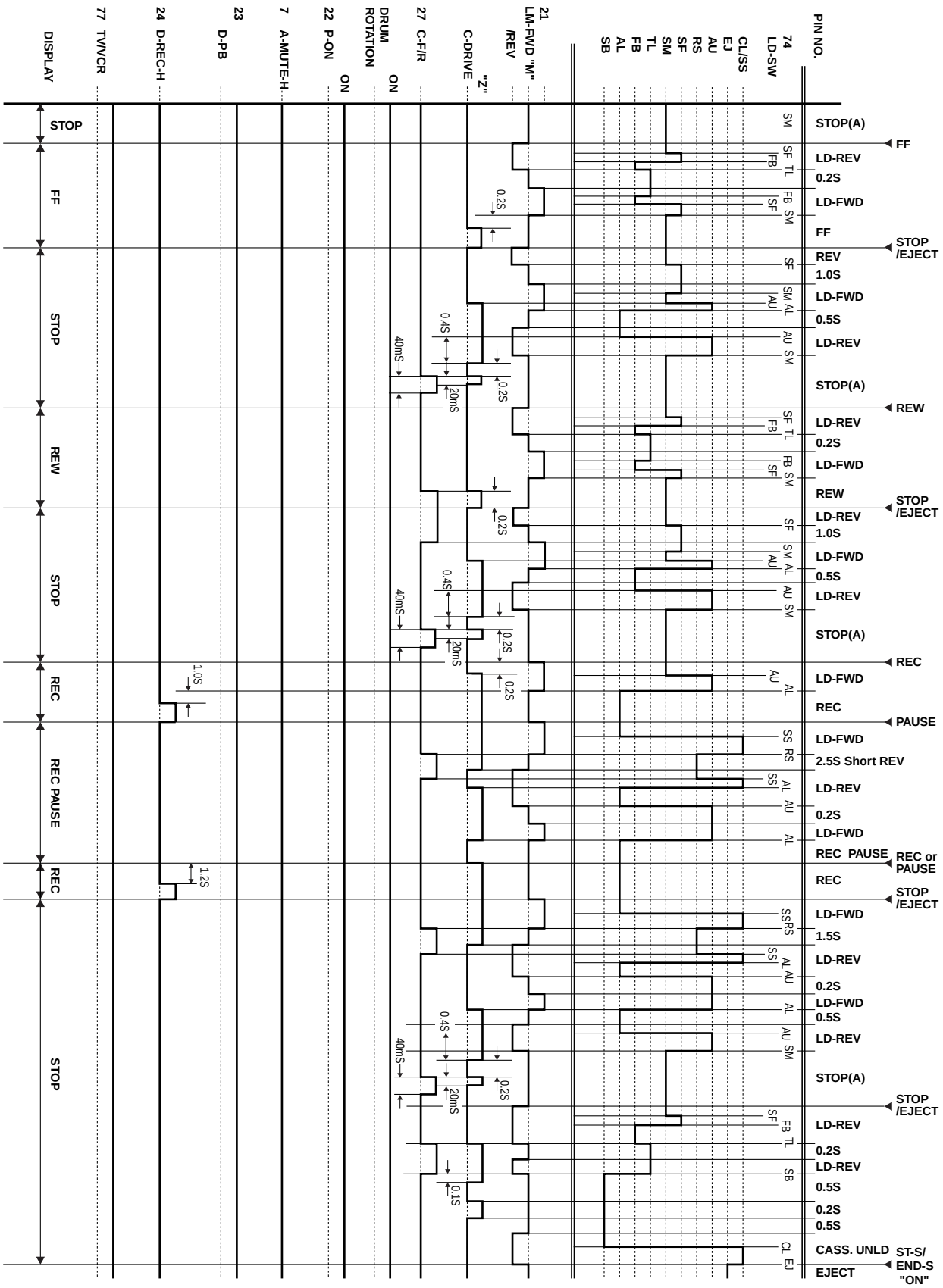
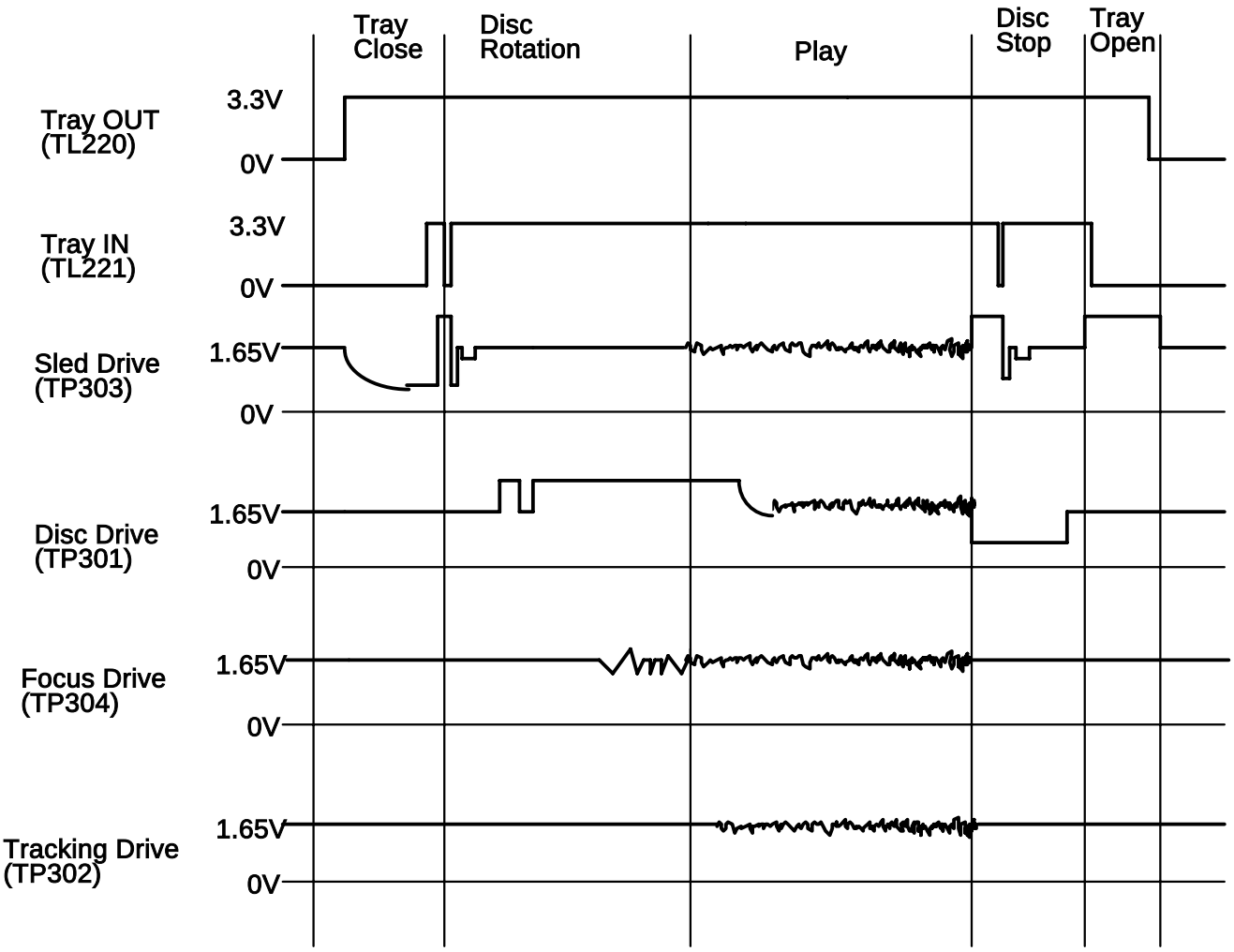

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
STOP
FF
REW
REC
REC PAUSE
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
REV
1.0S
0.5S
REW
REC
PAUSE
2.5S Short REV
REC or PAUSE
1.5S
CASS. UNLD
EJECT
STOP /EJECT
ST-S/ END-S "ON"
0.4S
40mS
20mS
0.1S
1.0S
1.2S

Fig. 4

[DVD Section]

Tray Close ~ Play / Play ~ Tray Open



IC PIN FUNCTION DESCRIPTIONS

IC501(SERVO / SYSTEM CONTROL IC)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pins that have * in the Pin No. section on table below are not used.

Pin No.	IN/ OUT	Signal Name	Function	Active Level
1	IN	P-DOWN -L	Power Voltage Down Detector Signal	L
2	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H")	H/L
3	IN	T-REEL	Take Up Reel Rotation Signal	PULSE
4	-	N.U.	Not Used	-
5	IN	REMOTE -VIDEO	Remote Control Sensor	L
6	-	N.U.	Not Used	-
7	OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")	H
8	-	N.U.	Not Used	-
9	-	N.U.	Not Used	-
10	-	N.U.	Not Used	-
11	OUT	TRICK-H	Special Playback= "H"	H/Z/L
12	IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data	H/L
13	OUT	IIC-BUS-SCL	IIC BUS Control Clock	H/L
14	OUT	SP/LP/ SLP	Top Speed Select Signal (SP="L"/ LP="Z"/SLP="H")	H/Z/L
15	-	N.U.	Not Used	-
16	OUT	INSEL/ ST-SL	Input Selector Control Signal (EE/ Rec)/Still/Slow (Playback)	H/Hi-z /L
17	-	N.U.	Not Used	-
18	OUT	RF-SW	Video Head Switching Pulse	H/L
19	OUT	D-V SYNC	Dummy V-sync Output	H/Hi-z
20	IN	RESET	System Reset Signal (Reset="L")	L
21	OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output	H/Z/L
22	OUT	P-ON-L	Power On Signal to Low	L
23	OUT	D-PB-L	Playback Instruction Signal	L
24	OUT	D-REC-H	Delayed Record Signal	H
25	-	N.U.	Not Used	-
26	OUT	DVD-POWER	DVD Power Control Signal	H
27	OUT	C-F/R	Capstan Motor FWD/ REV Control Signal (FWD="L"/REV="H")	H/L
28	OUT	C-CONT	Capstan Motor Control Signal	PWM
29	OUT	D-CONT	Drum Motor Control Signal	PWM
30	-	N.U.	Not Used	-
31	-	VDD	VDD	-
32	OUT	OSCO	Main Clock Output 14.31818MHz	-
33	IN	OSCI	Main Clock Input 14.31818MHz	-
34	-	VSS	VSS	
35	IN	XI	Sub Clock Input 32.768 MHz	-
36	OUT	XO	Sub Clock Output 32.768 MHz	-
37	IN	SXI	Operation Mode Selecting Input Signal	-
38	OUT	VIDEO-OUT	Composite Video Signal Output	-
39	-	Vss2	Vss2	-
40	IN	VIDEO-IN	Composite Video Signal Input	
41	IN	C-SYNC	Composite Synchronized Pulse	PULSE
42	-	VDD2	VDD2	-
43	IN	AFCC	Low Path Filter Input Signal For AFC	-
44	OUT	AFCLPF	Low Path Filter Output Signal For AFC	-
45	-	N.U.	Not Used	-
46	OUT	OUTPUT-SELECT	Output Select	H/L
47	IN	D-PFG	Drum PG/FG Input Signal	PULSE

Pin No.	IN/ OUT	Signal Name	Function	Active Level
48	-	N.U.	Not Used	-
49	IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
50	-	AFG	GND	-
51	OUT	VRO	Servo Standard Voltage Output	-
52	IN	VRI	Servo Standard Voltage Input	-
53	-	AVss	AVSS	-
54	IN	CTLA	CTL Amp. AC GND	-
55	-	AVDD	AVDD	-
56	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)	-
57	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)	-
58	OUT	CTL	Amp. Output Control Signal for Test Point	-
59	-	N.U.	Not Used	-
60	IN	POW-MONITOR	DVD Power Monitor Signal (P-off="L", P-on="H")	H/L
61	-	N.U.	Not Used	-
62	IN	END-S	Tape End Position Detect Signal	A/D
63	IN	AFC	Automatic Frequency Control Signal	A/D
64	IN	V-ENV	Video Envelope Comparator Signal	A/D
65	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
66	IN	KEY-2	A/D Key Data Signal 2	A/D
67	IN	KEY-1	A/D Key Data Signal 1	A/D
68	IN	LD-SW	Deck Mode Position Detector Signal	A/D
69	IN	ST-S	Tape Start Position Detector Signal	A/D
70	OUT	VCR-IND	VCR Mode LED Signal Output	H/L
71	OUT	DVD-IND	DVD Mode LED Signal Output	H/L
72	OUT	REC-IND	REC Mode LED Signal Output	L
73	-	N.U.	Not Used	-
74	-	N.U.	Not Used	-
75	OUT	TIMER-IND	“TIMER” LED Signal Output	H/L
76	OUT	CONV-SW	RF Conv. Output Channel Switching Signal 3ch=”Hi-z”, 4ch=”L”	Hi-z/L
77	OUT	VCR/TV	RF Conv. ON/OFF Signal (TV="L"/ VCR="H")	H/L
78	OUT	C-ROTA	Color Phase Rotary Changeover SIgnal	H/L
79	OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
80	IN	H-A-COMP	Head Amp Comparator Signal	H/L

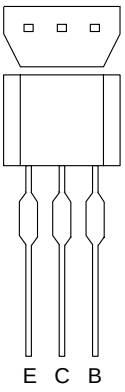
Notes:

Abbreviation for Active Level:

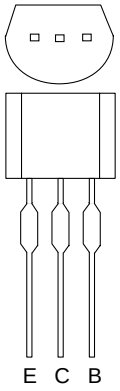
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

LEAD IDENTIFICATIONS

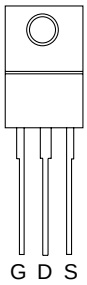


2SA1175(F,H,J)
2SC2785(F,H,J,K)
BA1F4M-T
BN1F4M-T
KRA103M
KRC103M
KTA1266(GR)
KTA1267(GR,Y)
KTC3193(Y)
KTC3199(BL,GR,Y)



2SA1015-GR(TPE2)
2SC1815-BL(TPE2)
2SC1815-GR(TPE2)
2SC1815-Y(TPE2)
2SC2120-Y(TPE2)
KTC3198(GR,Y)
KTC3203(Y)

2SK3543



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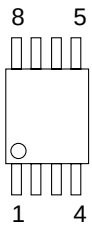
KIA4558P



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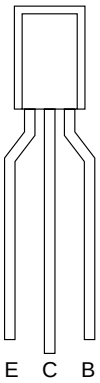

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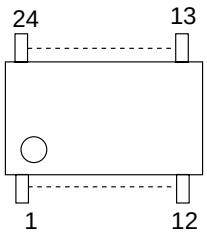

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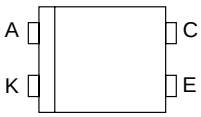
EL817C
LTV-817B-F



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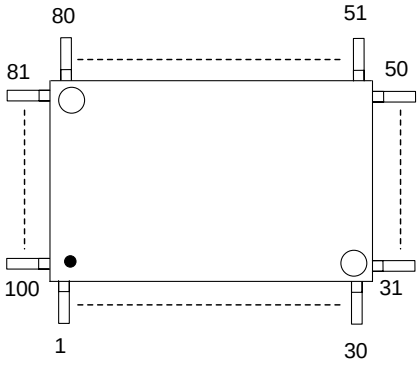

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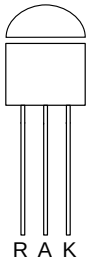
KIA431A-AT
TL431-TA
TL431A-TA



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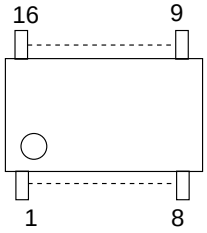

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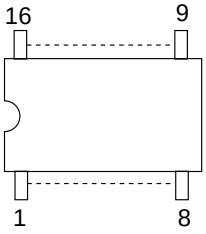

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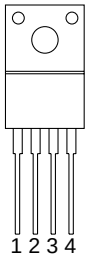

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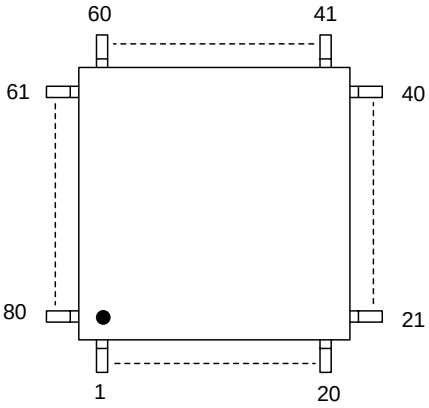

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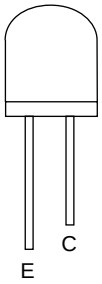


Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

DECK MECHANISM SECTION

DVD PLAYER & VIDEO CASSETTE RECORDER

EWD2203/EWD2003

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**

TABLE OF CONTENTS

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ❍: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	❍	●	❍	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	AC Head Assembly			●	
B573,B574	Reel (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
B133,B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm(A) Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder (F)		●		●
B593 (4 head, 4 head HiFi only)	Cam Holder (F) Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% lsopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

   * B73 ------ Recording Model only

Cleaning

Cleaning of Video Head

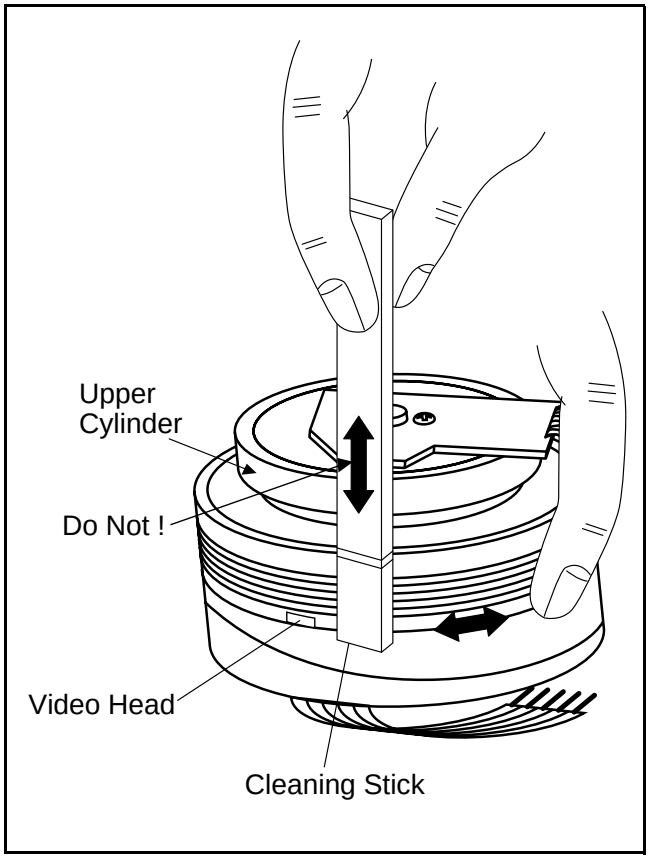
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of Audio Control Head

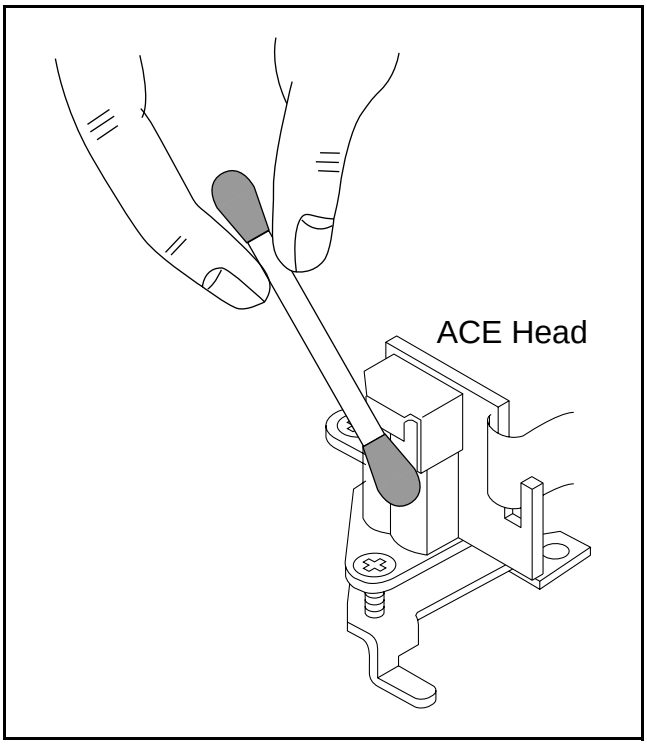
Clean the head with a cotton swab.

Procedure

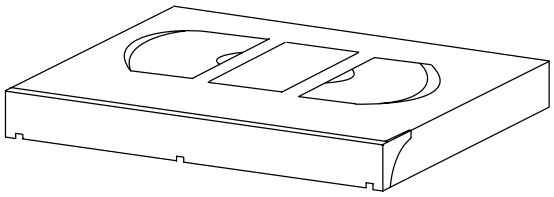
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

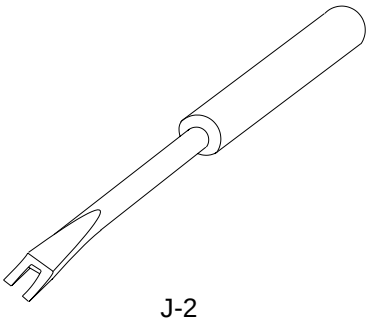
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



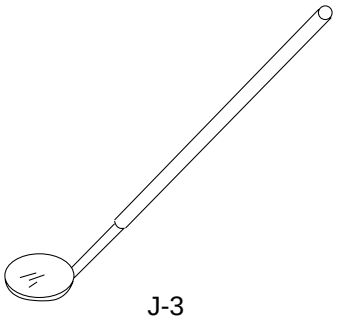
SERVICE FIXTURE AND TOOLS



J-1-1, J-1-2



J-2



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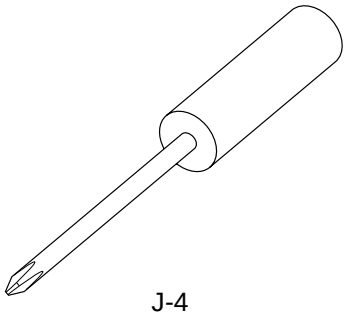
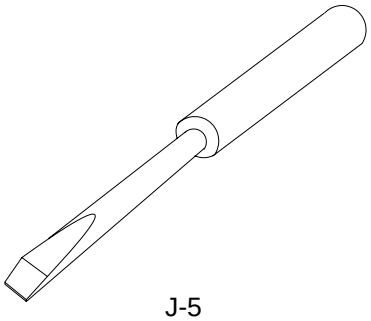


J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL8N (2Head only) FL8NW (4Head only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

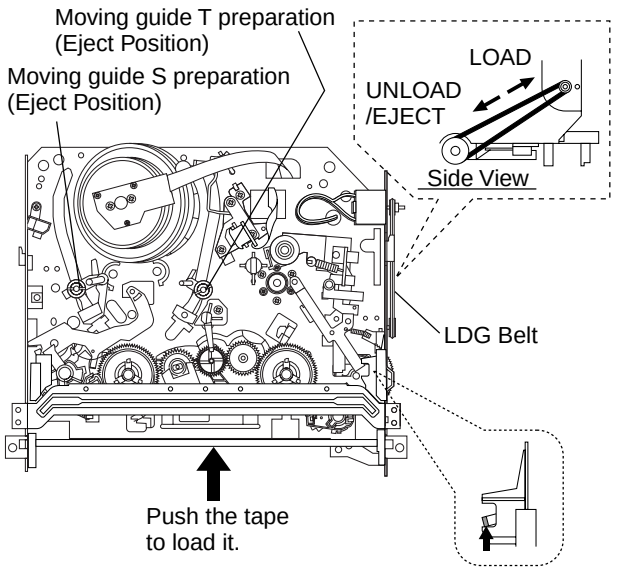


Fig. M1

Bottom View

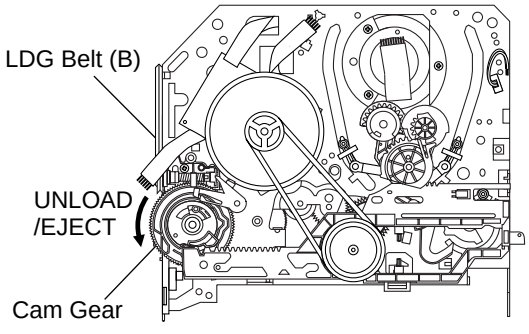


Fig. M2

1.Tape Interchangeability Alignment

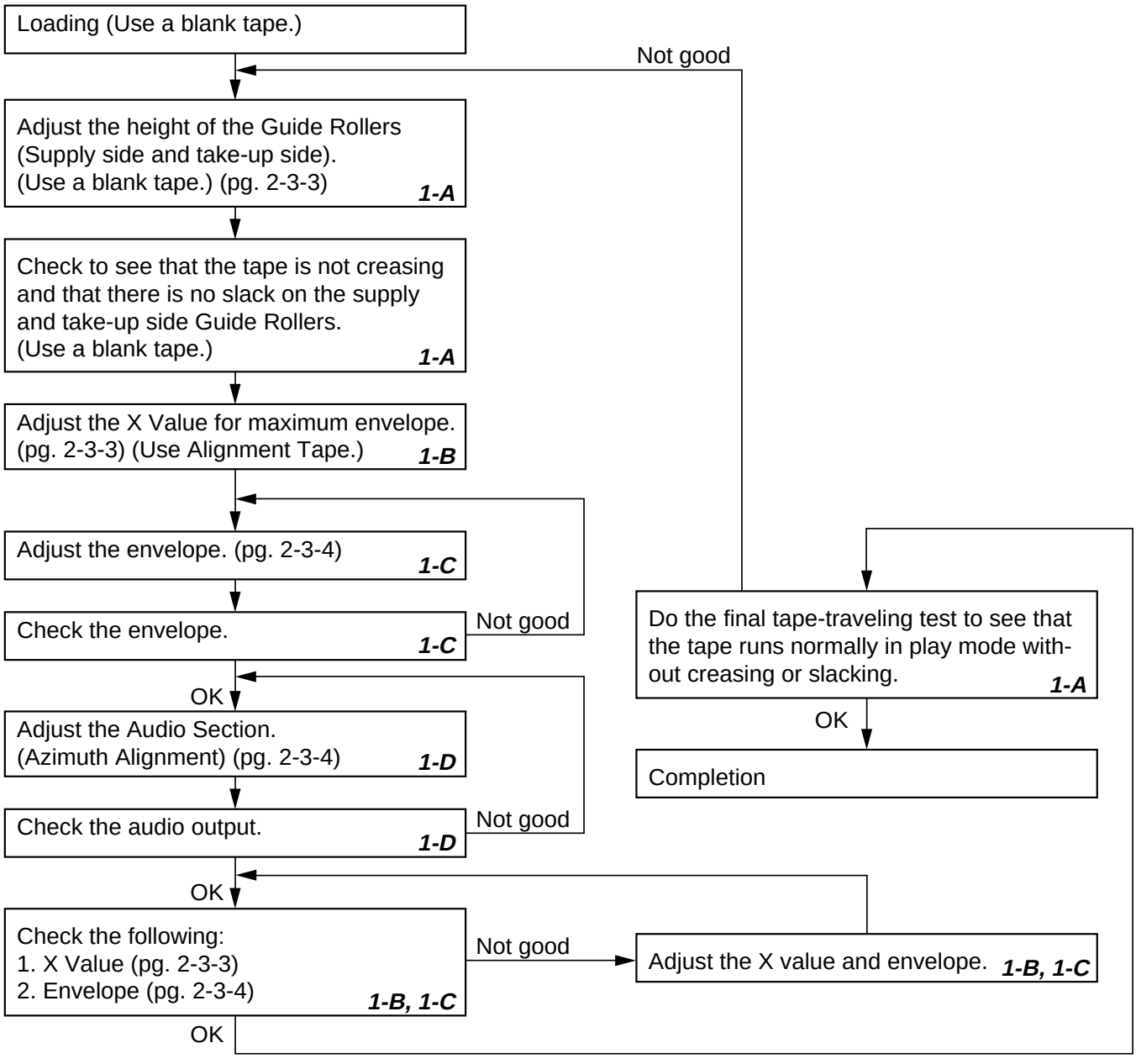
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL8NW)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling



1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

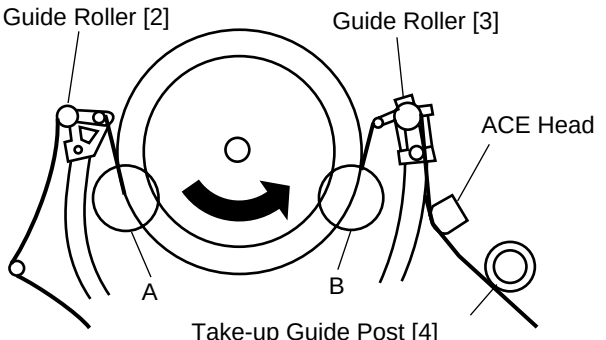


Fig. M3

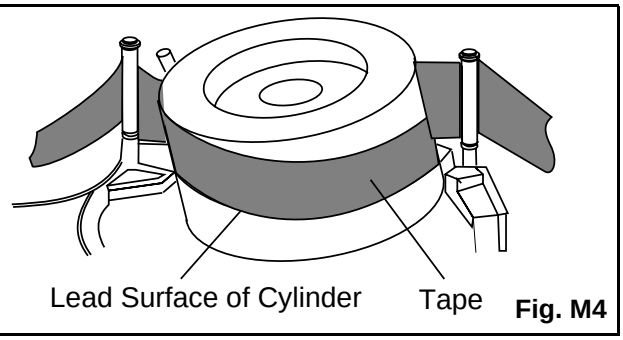


Fig. M4

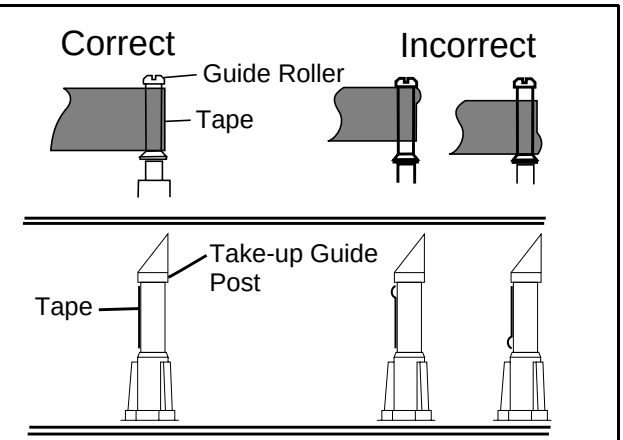


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and AC Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the AC Head. (Fig. M6)

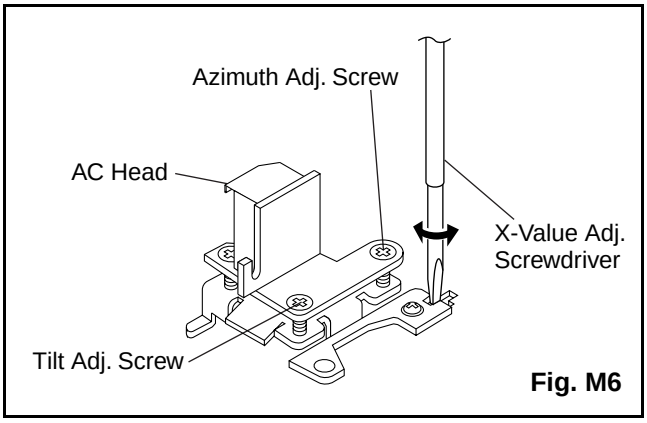


Fig. M6

1-B. X Value Alignment

Purpose:

To align the Horizontal Position of the Audio/Control/Erase Head.

Symptom of Misalignment:

If the Horizontal Position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP513 (CTL) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8NW) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing CH UP button then " PLAY " button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)
5. Press CH UP button on the unit until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press CH DOWN button on the unit until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8NW). Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8NW) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

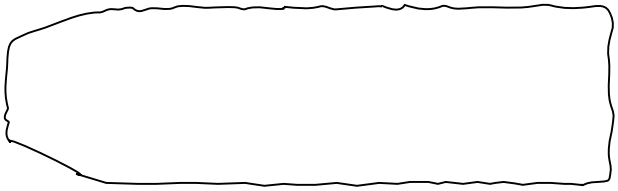


Fig. M7

Dropping envelope level at the end of track.

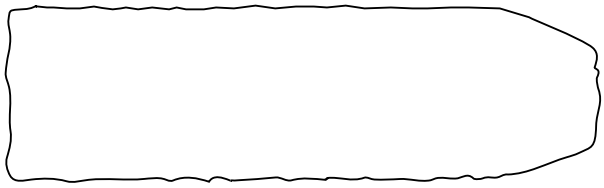


Fig. M8

Envelope is adjusted properly. (No envelope drop)

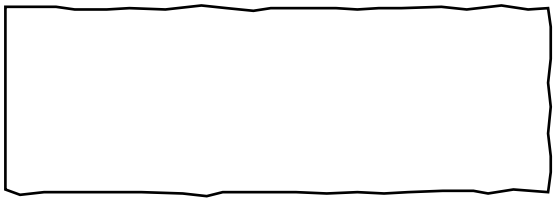


Fig. M9

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-7-1.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig.DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4		
[3]	[2]	Slider (SP)	T	DM5	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3),*(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1,DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1,DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	AC Head Assembly	T	DM1,DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1,DM8	*(P-2)	
[11]	[10]	C Door Opener	T	DM1,DM8	*(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1,DM8	*(P-3)	
[13]	[12]	Pinch Arm Assembly	T	DM1,DM8		
[14]	[14]	FE Head Assembly	T	DM1,DM9	(S-5)	
[15]	[15]	Prism	T	DM1,DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1,DM15		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7),*(P-4)	
[20]	[7],[8], [10]	Capstan Motor	B	DM2,DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2,DM12	(C-1)	
[22]	[22]	Cam Holder (F) Assembly	B	DM2,DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2,DM12	(C-4)*(P-5)	
[24]	[24]	Mode Gear	B	DM2,DM13	(C-2)	
[25]	[21],[23], [24]	Mode Lever	B	DM2,DM13	(C-3), *(L-8)	
[26]	[22]	Worm Holder	B	DM2,DM13	(S-9),*(L-9),*(L-10)	
[27]	[26]	Pulley Assembly	B	DM2,DM13		
[28]	[25],[26]	Cam Gear (A)	B	DM2,DM13		
[29]	[25]	Idler Gear	B	DM1,DM14		
[30]	[29]	Idler Arm	B	DM1,DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2,DM14	*(P-6)	
[32]	[25]	Loading Arm (SP) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[32]	Loading Arm (TU) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9
[34]	[2],[25]	M Brake (TU) Assembly	T	DM1,DM15	*(P-7), Brake Belt	
[35]	[2],[25]	M Brake (SP) Assembly	T	DM1,DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1,DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1,DM15		
[39]	[38]	M Gear	T	DM1,DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1,DM15		
[41]	[32],[36]	Moving Guide S Preparation	T	DM1,DM16		
[42]	[33]	Moving Guide T Preparation	T	DM1,DM16		
[43]	[19]	TG Post Assembly	T	DM1,DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17		(+)Refer to Alignment Sec.Pg.2-4-9
[45]	[44]	F Door Opener	R	DM17		
[46]	[46]	Cleaner Assembly	T	DM1,DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

Top View

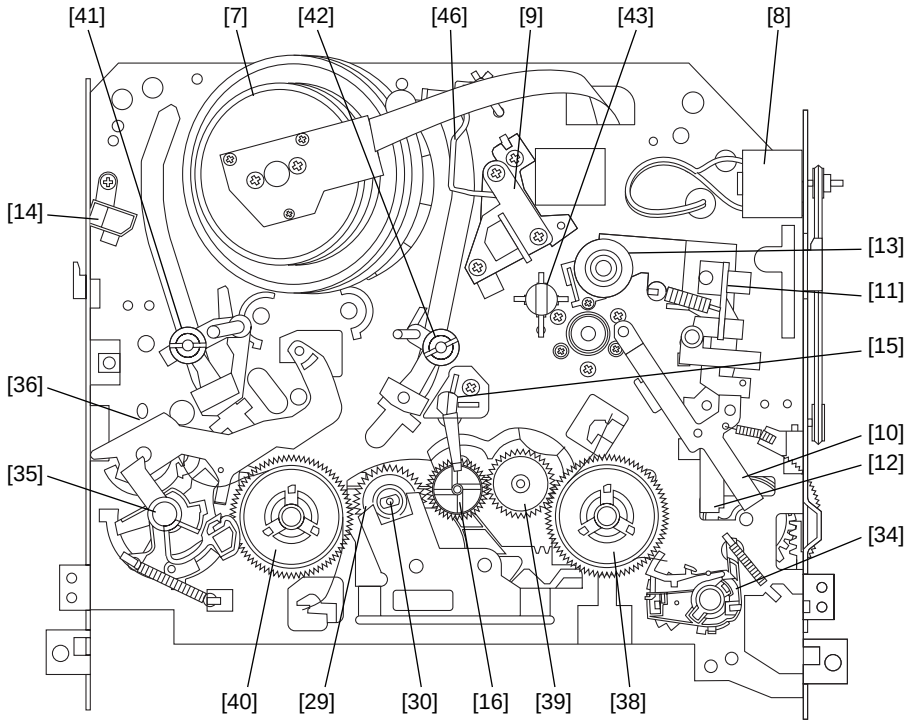


Fig. DM1

Bottom View

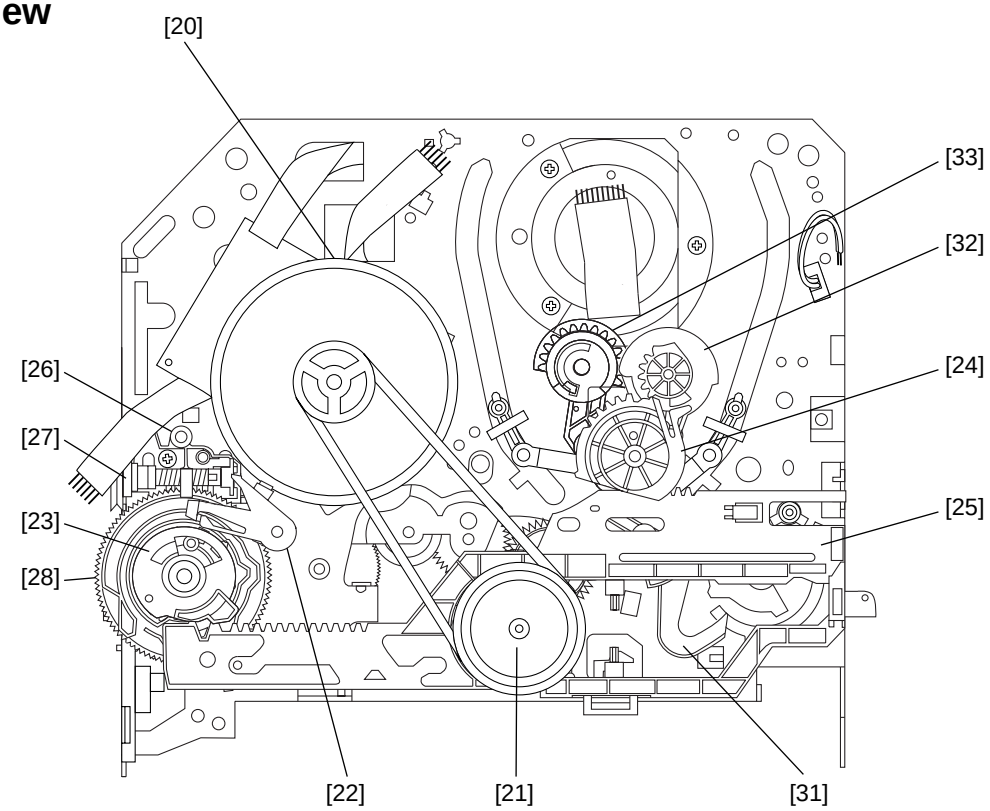


Fig. DM2

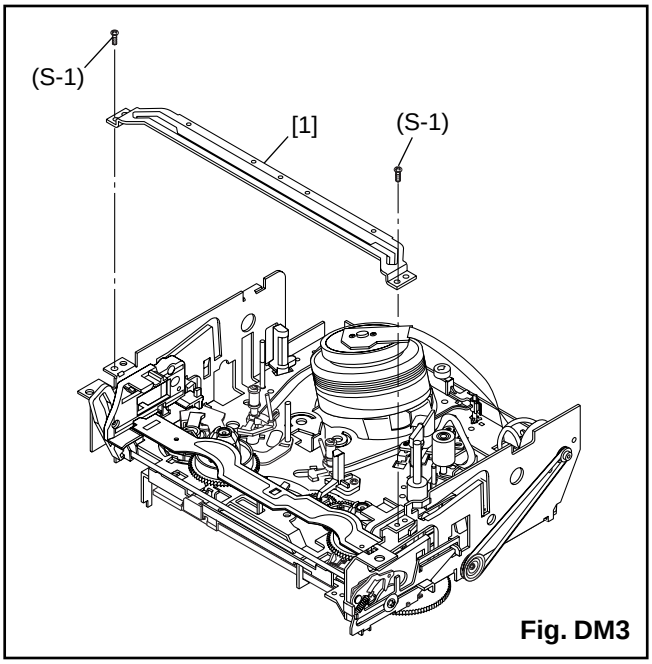


Fig. DM3

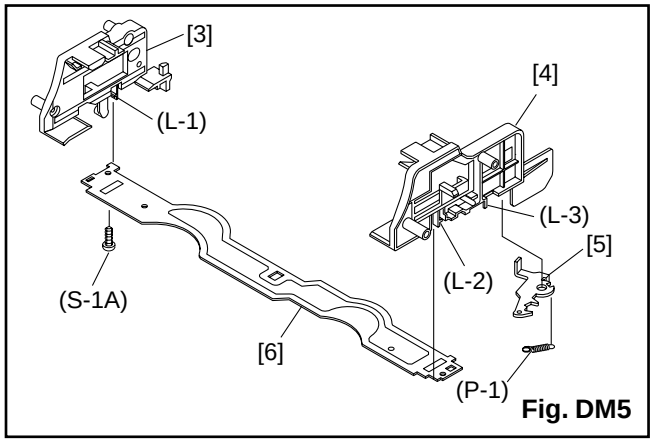


Fig. DM5

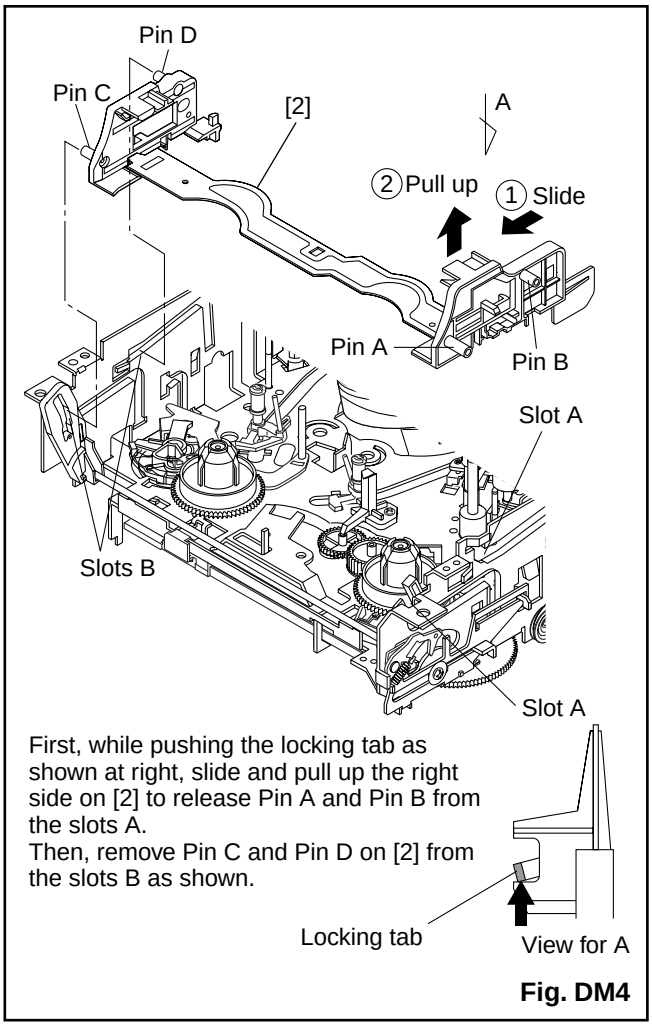


Fig. DM4

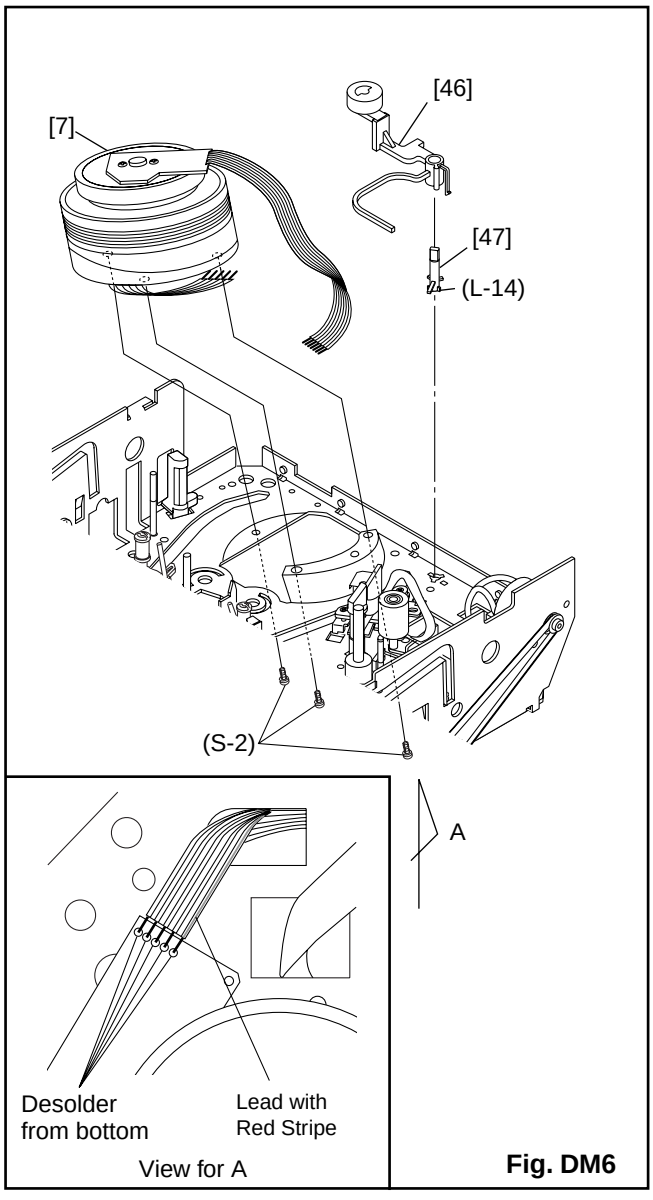


Fig. DM6

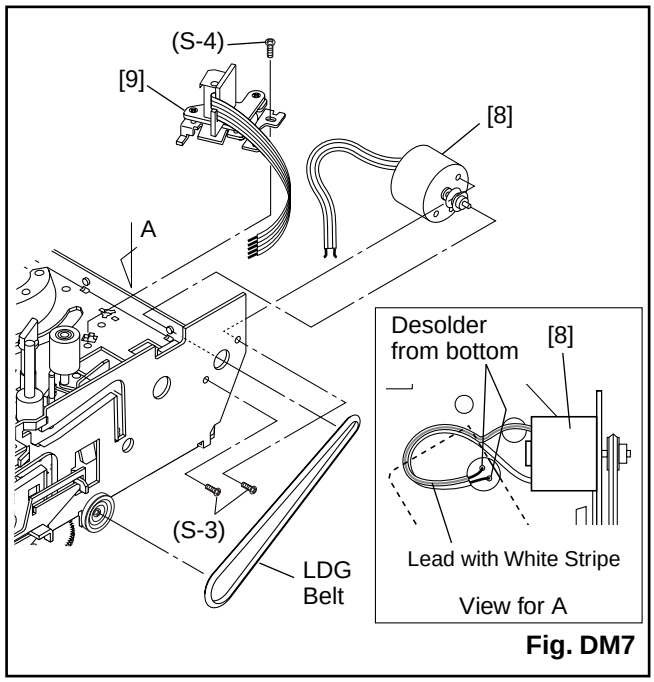


Fig. DM7

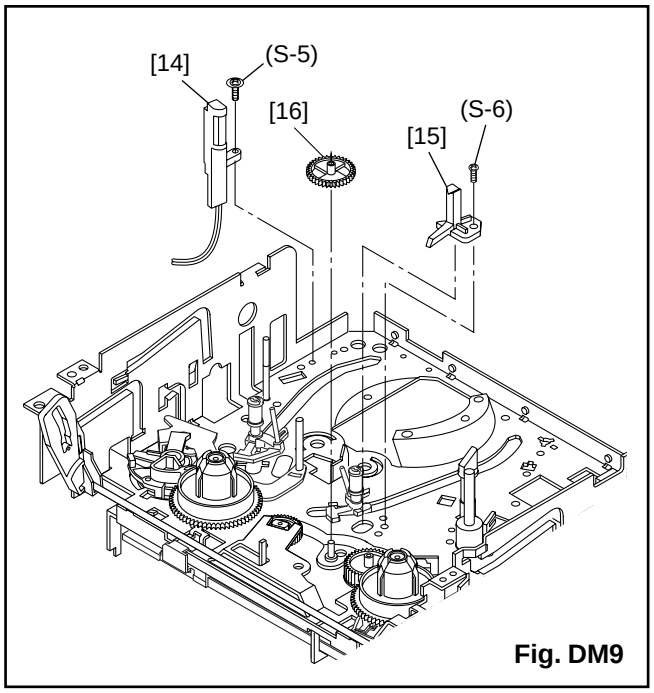


Fig. DM9

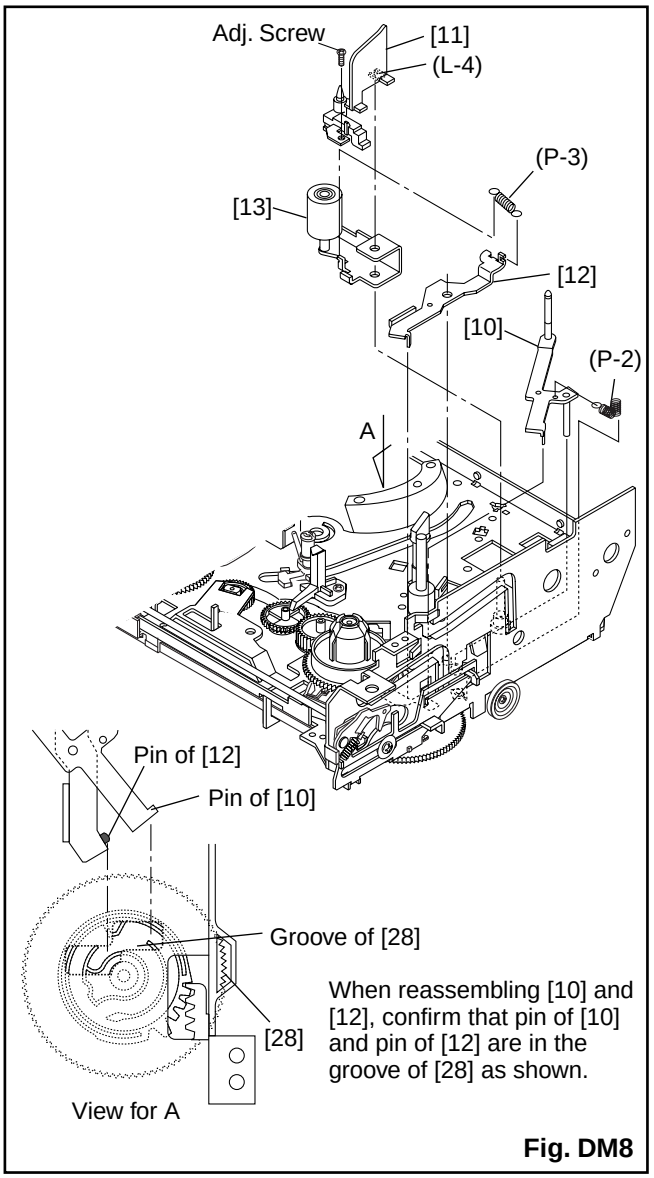


Fig. DM8

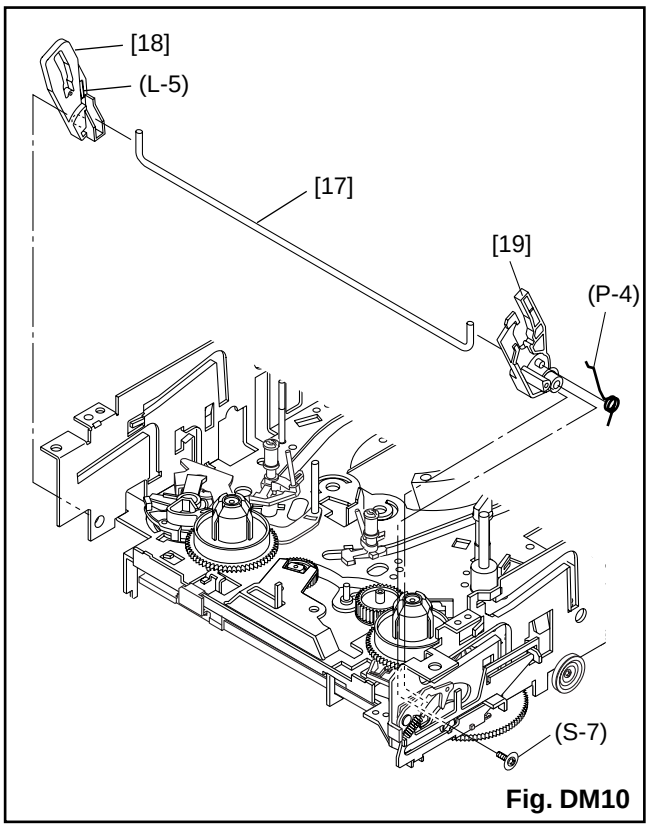


Fig. DM10

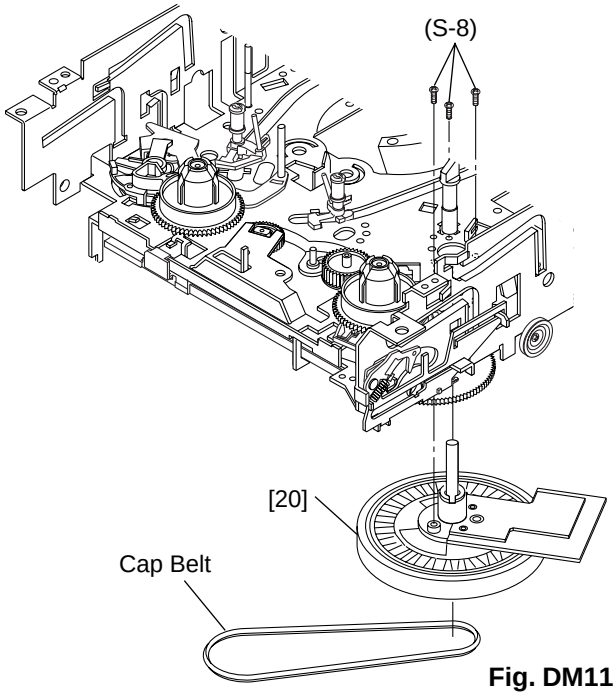
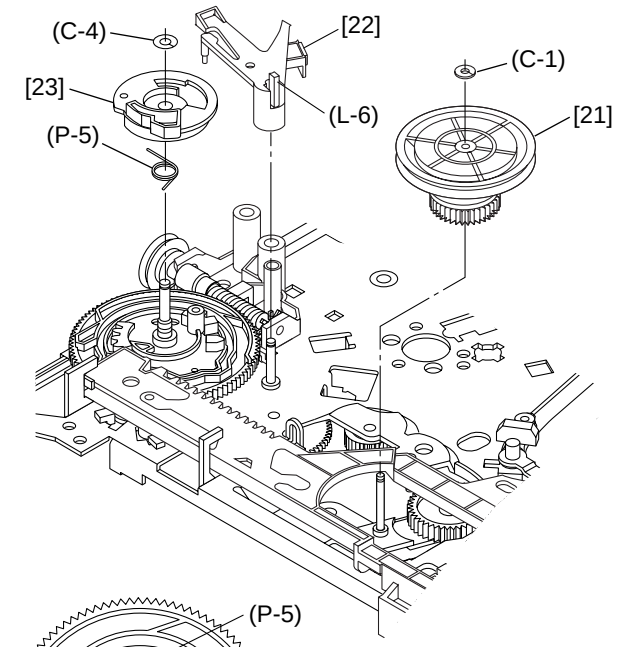
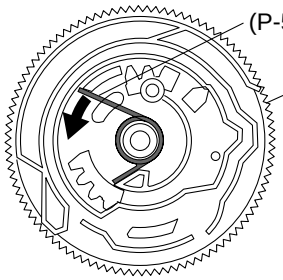
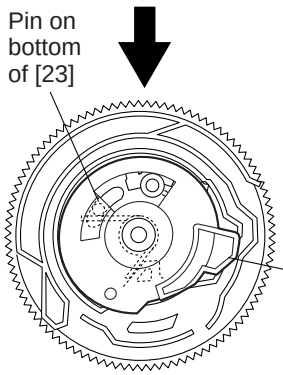


Fig. DM11

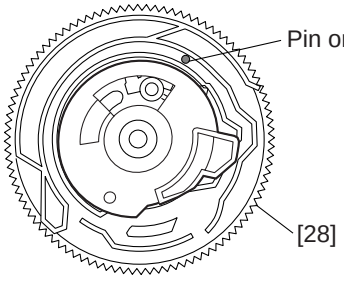




When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.

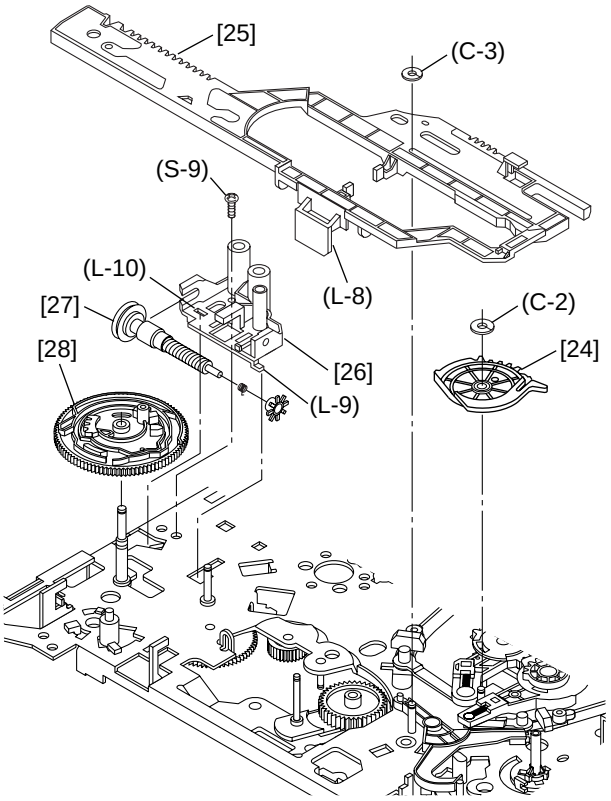


Top View

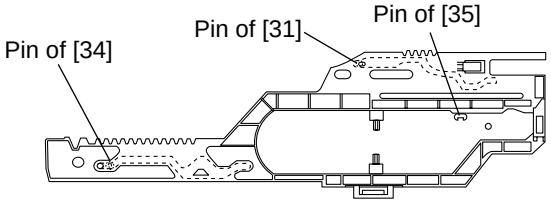


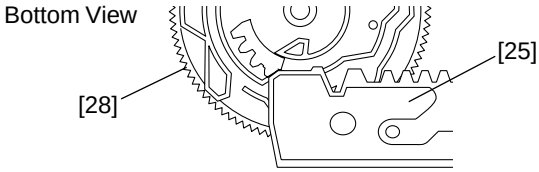
Position of pin on [22]

Fig. DM12

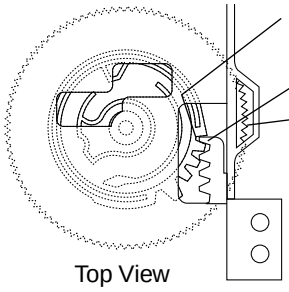


Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

Fig. DM13

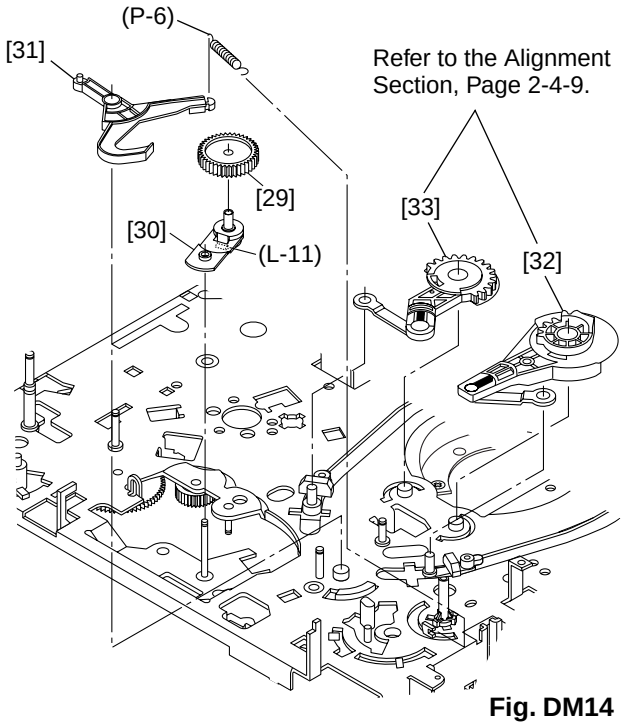


Fig. DM14

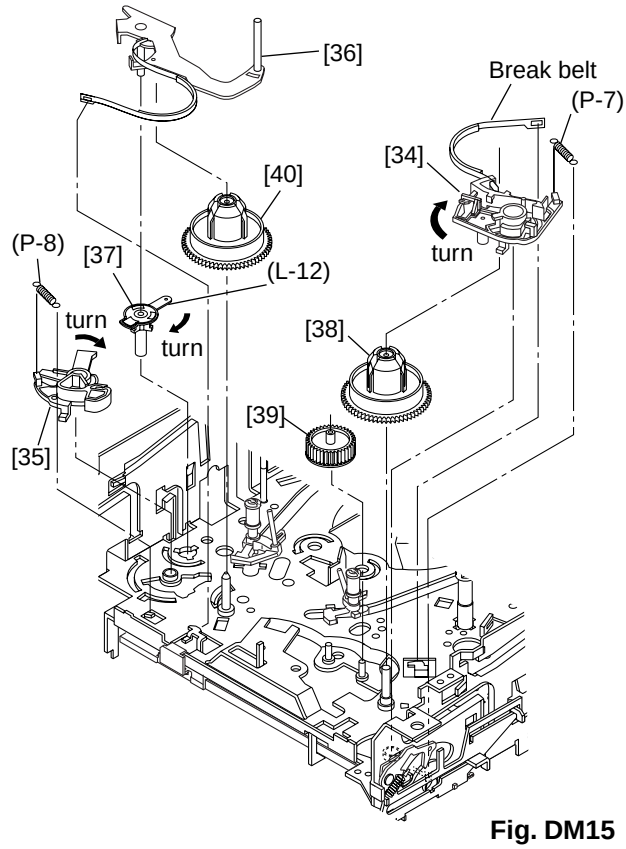


Fig. DM15

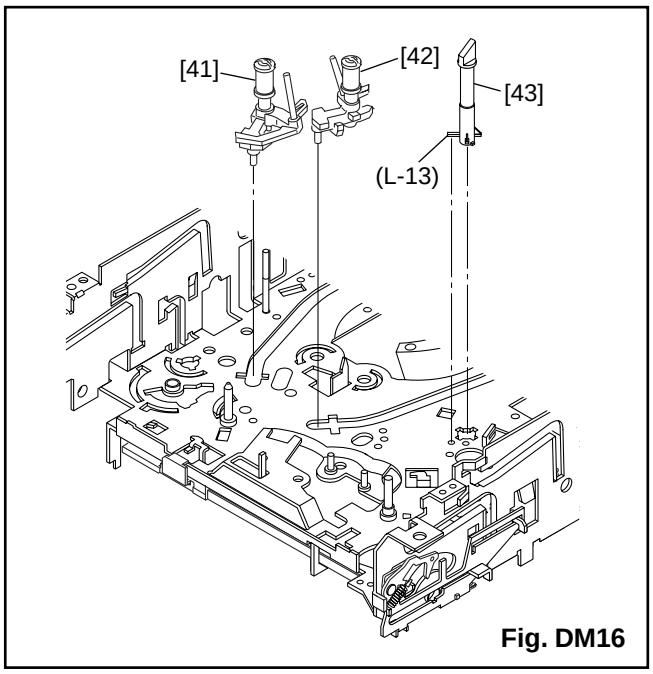


Fig. DM16

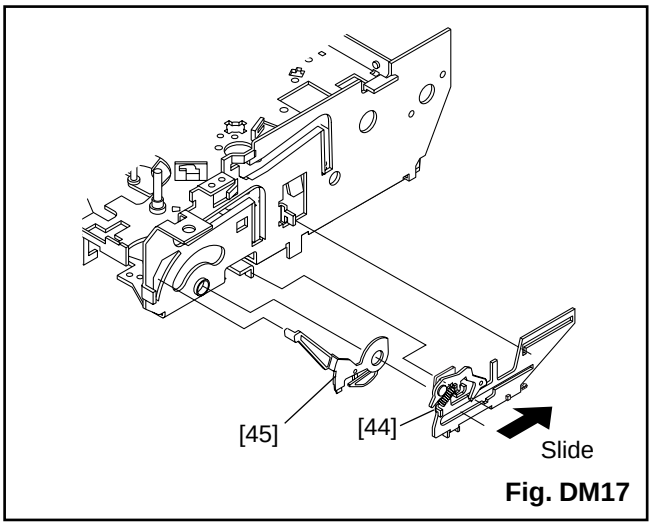


Fig. DM17

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

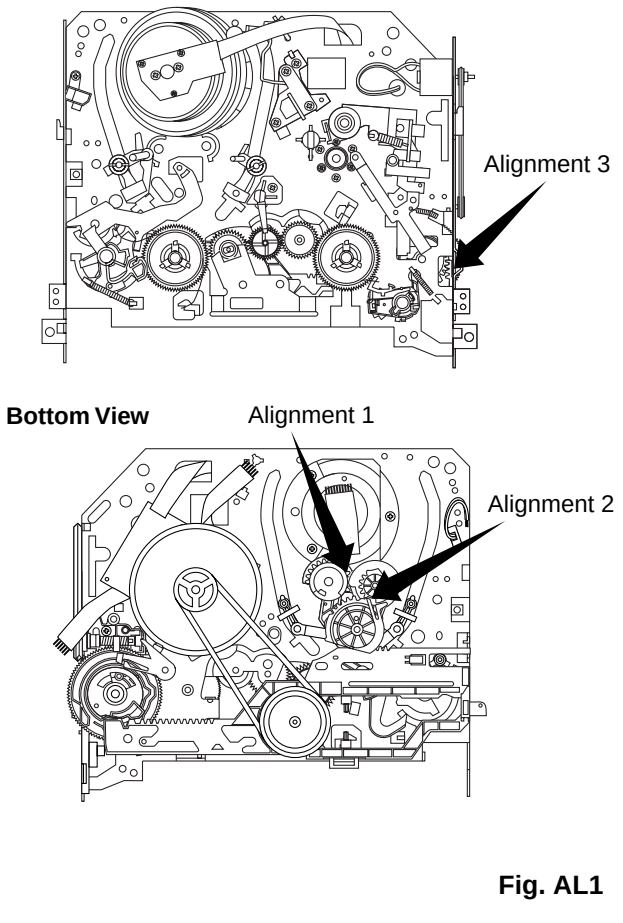


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

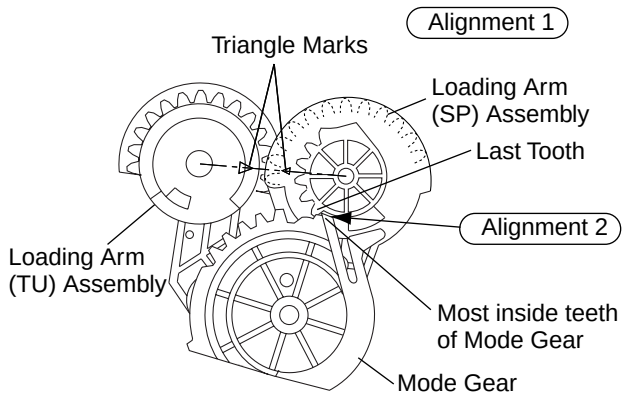


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

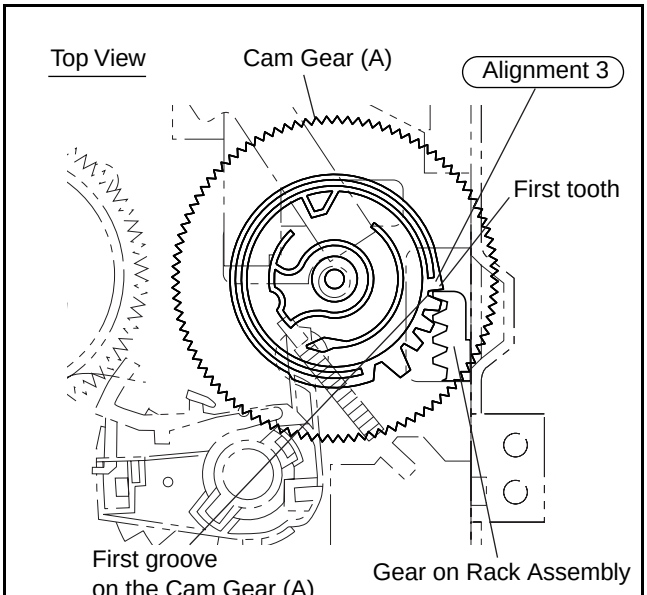


Fig. AL3

EXPLODED VIEWS AND PARTS LIST SECTION

DVD PLAYER & VIDEO CASSETTE RECORDER

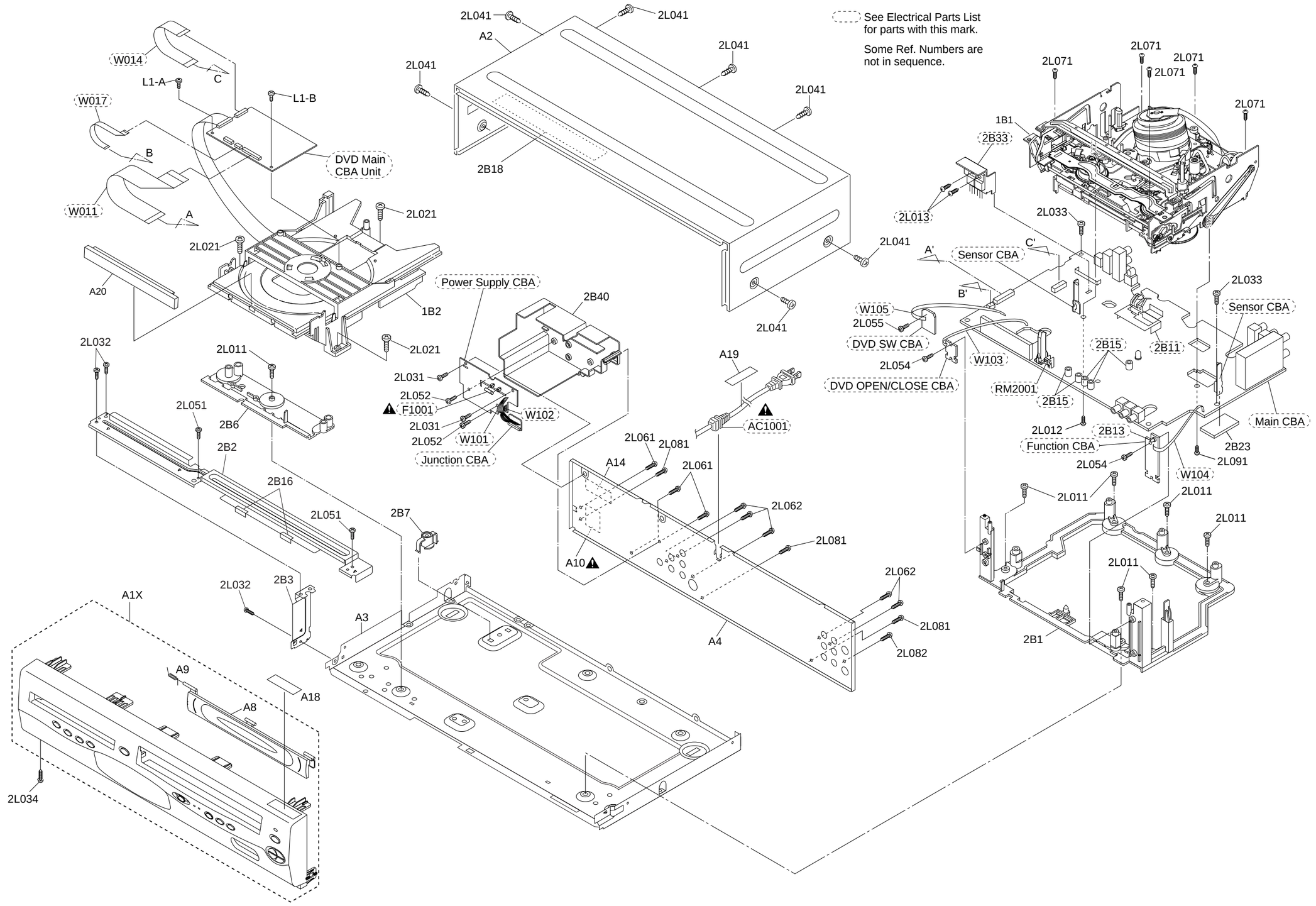
EWD2203/EWD2003

Sec. 3: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

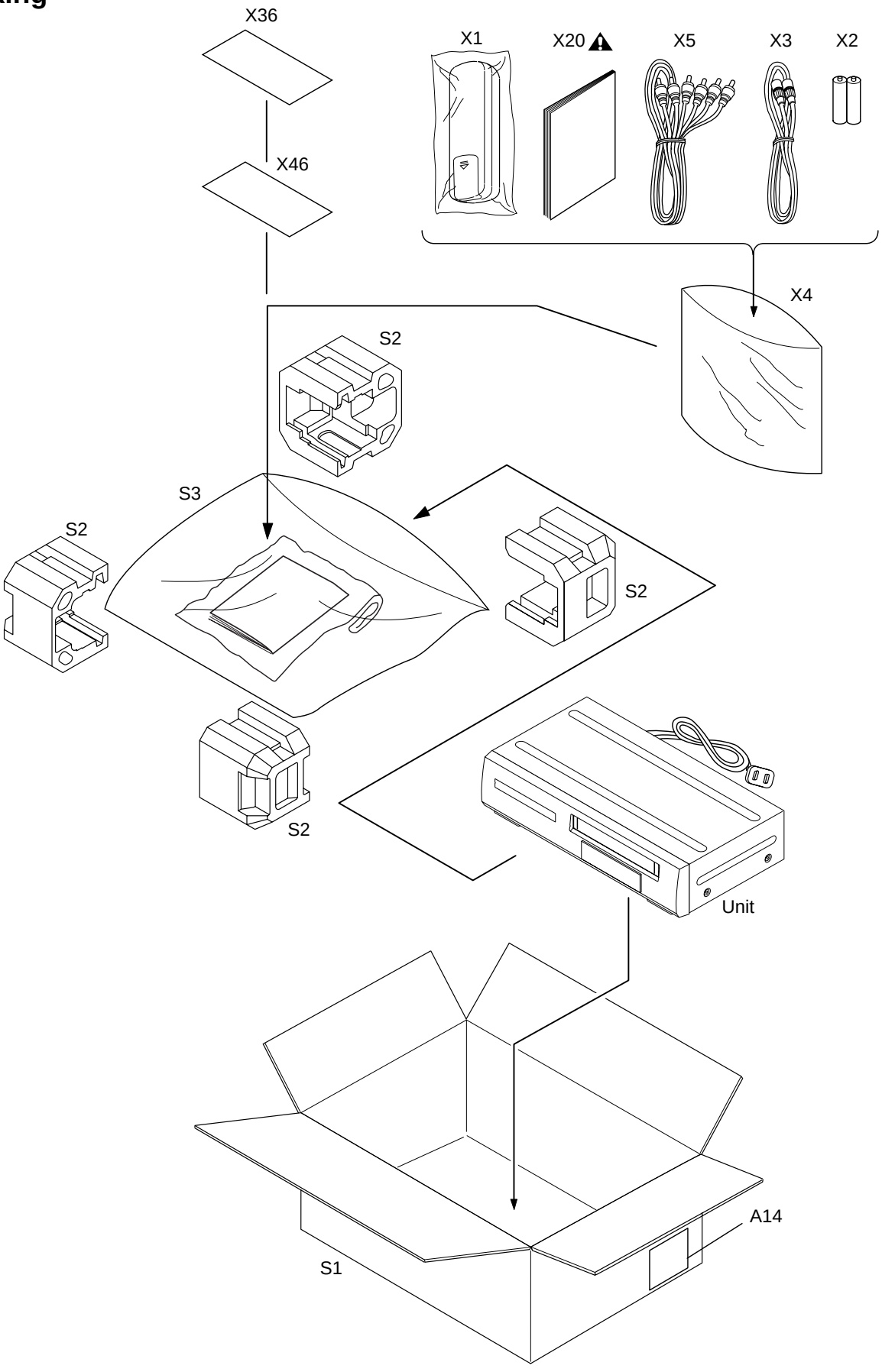
TABLE OF CONTENTS

EXPLODED VIEWS

Cabinet



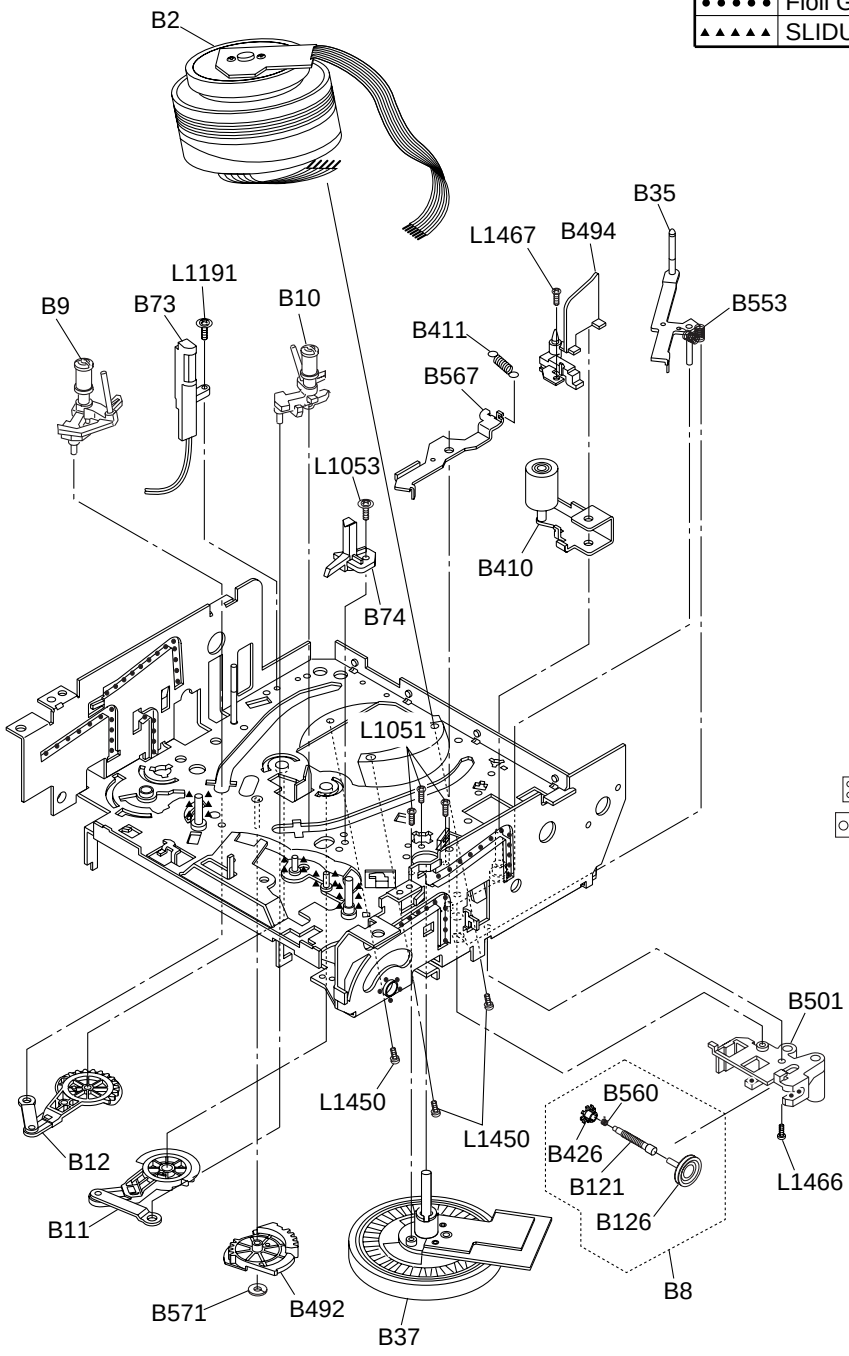
Packing

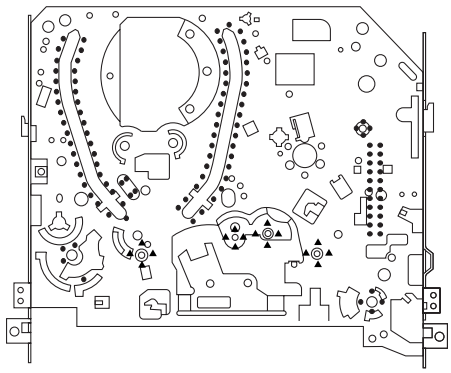


DECK EXPLODED VIEWS

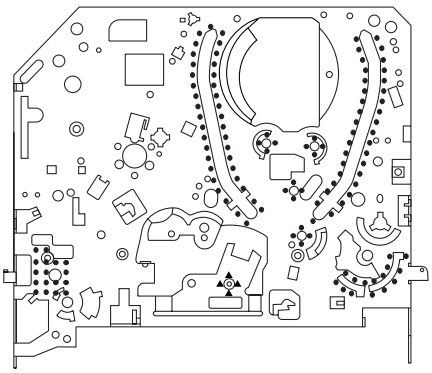
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





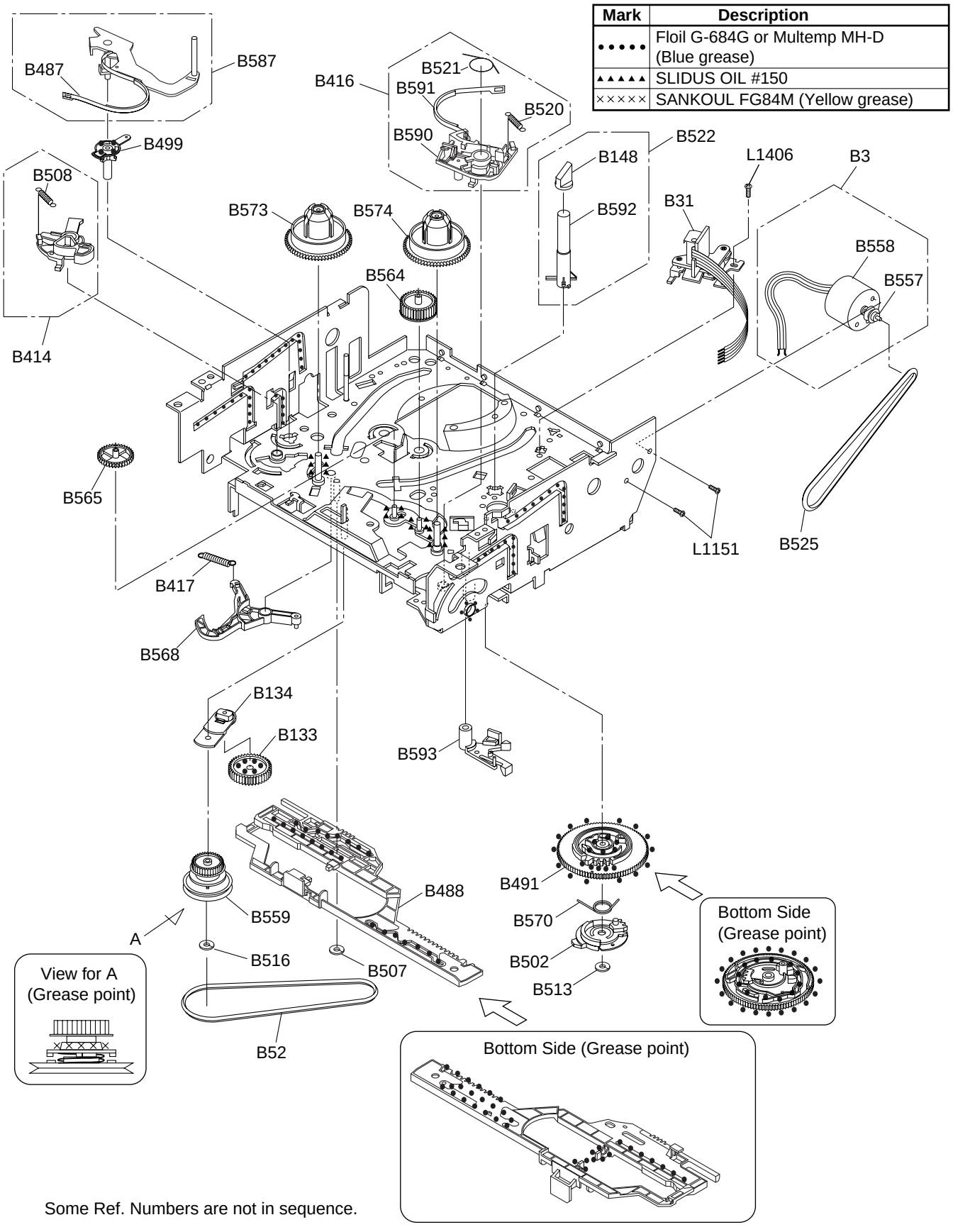
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

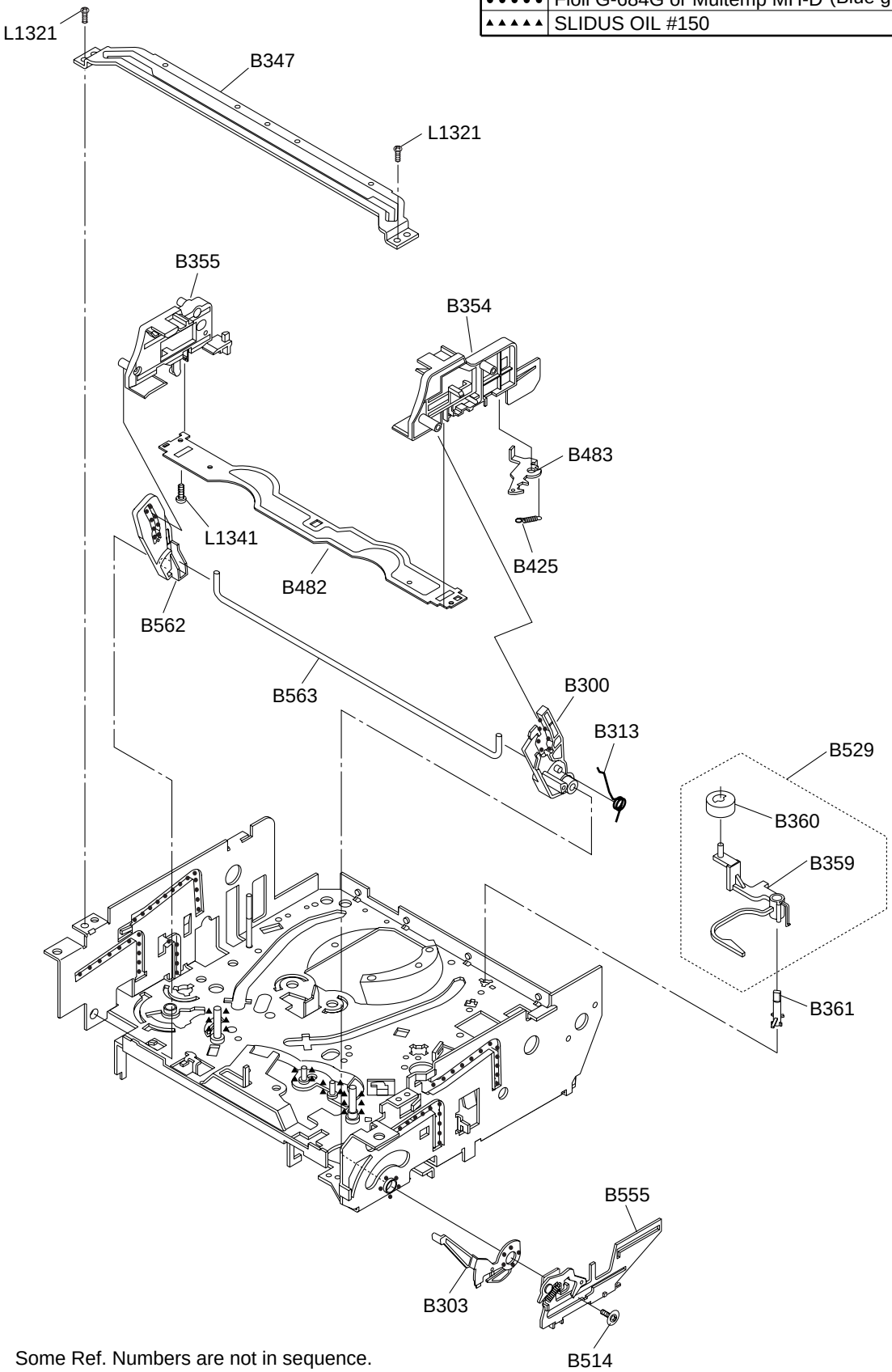
Deck Mechanism View 2



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE:
Parts that are not assigned part numbers (---------) are not available.

Comparison Chart of Models and Marks

Model	Mark
EWD2203	A
EWD2003	B

Ref. No.	Mark	Description	Part No.
A1X	A	FRONT ASSEMBLY H9410UD	0VM204041
A1X	B	FRONT ASSEMBLY H94A4UD	0VM204460
A2		TOP COVER H9400UD	0VM101208
A3		CHASSIS(E4+U27) H9400UD	0VM101207
A4		PANEL, REAR H9410UD	0VM204006
A8	A	DOOR, CASSETTE H9410UD	0VM305940
A8	B	DOOR, CASSETTE H94A4UD	0VM416103
A9		SPRING, DOOR H7220UD U15	0VM408617
A10⚠	A	LABEL, RATING(U) H94X1UD or	---------
⚠	A	LABEL, RATING(D) H94X1UD	---------
A10⚠	B	LABEL, RATING(U) H94X2UD or	---------
⚠	B	LABEL, RATING(D) H94X2UD	---------
A14		LABEL, BAR CODE HB400UD	---------
A14	A	LABEL, BAR CODE H9410UD	---------
A14	B	LABEL, BAR CODE H94A4UD	---------
A18		LABEL, TELEPHONE NUMBER H7931UD(EMERSON)	---------
A19		HOLDER, EAS(H9410UD) MAKER NO.EM150DR	0VM415877
A20	A	PANEL, TRAY H9410UD	0VM101245
A20	B	PANEL, TRAY H94A4UD	0VM416109
1B1		DECK ASSEMBLY CZD012/VM1640	N1640FL
1B2		DVD MECHA 0838 VCDVM040	N79F0GVM
2B1		DECK PEDESTAL-1 H9400UD	0VM101201-1
2B2		TOP BRACKET H9100UD	0VM203252A
2B3		SIDE BRACKET H9100UD	0VM305013
2B6		DECK PEDESTAL-2 H9400UD	0VM101201-2
2B7		DECK PEDESTAL-3 H9400UD	0VM101201-3
2B16		TAPE, HIMELON H9206JD	0VM413956
2B18		FIBER, TOP CASE HC460ED	0VM412906
2B23		M-PCB RUBBER H9400UD	0VM415762
2B40		INSULATOR H9400UD	0VM305872
2L011		SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
2L012		SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080
2L021		SCREW, S-TIGHT M3X26 H9400UD	0VM414507
2L031		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L032		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L033		SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L034		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L041		SCREW, C-TIGHT M3X5 BIND HEAD +	GBCC3050
2L051		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L052		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L054		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L055		SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L061		SCREW, B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L062		SCREW, B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L071		SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L081		SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L082		SCREW, S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L091		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
		PACKING	
S1	A	GIFT BOX CARTON H9410UD	0VM306061A
S1	B	GIFT BOX CARTON H94A4UD	0VM306665
S2		STYROFOAM(2) H9100UD	0VM203377C
S3		UNIT, BAG E5500UD	0VM411683
		ACCESSORIES	
X1		REMOTE CONTROL UNIT 364/CRC007 or	NA209UD
		REMOTE CONTROL UNIT 364/CRC007	NA259UD
X2		DRY BATTERY R6P/2S or	XB0M451T0001
		DRY BATTERY ES-GR6M-C	XB0M571GLP01
X3		RF CABLE 2.5C-2V	WPZ0901TM002
X4		ACCESSORY BAG H3600UD T=0.03	0VM409454
X5		AV CORD TSCKA-Y/RW100 or	WPZ0102TM015
		AV CORD RCA(M*2)TO RCA(M*2)	WPZ0102LTE01
X20⚠	A	OWNER'S MANUAL H9410UD	0VMN03468
X20⚠	B	OWNER'S MANUAL H94A4UD	0VMN03884
X36		RETURN STOP SHEET H9410UD	0VM414898
X46		DVD RENTAL SHEET H9410UD	0VMN03694

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

3. LED Type :
   When it is necessary to replace one or more of the following diodes, all six should be replaced: D564, D565, D566, D567, D2001 and D2002 on the Main CBA.

DVD MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD MAIN CBA UNIT	N7BFNGUP

MCV CBA

Ref. No.	Description	Part No.
	MCV CBA Consists of the following	0VSA14670
	MAIN CBA (MCV-A) FUNCTION CBA (MCV-B) DVD OPEN/CLOSE CBA(MCV-C) DVD SW CBA(MCV-D) SENSOR CBA	---------- ---------- ---------- ---------- 0VSA13627

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA(MCV-A) Consists of the following	---------
	CAPACITORS	
C023	ELECTROLYTIC CAP. 100µF/25V M or	CE1EMASDL101
	ELECTROLYTIC CAP. 100µF/25V M	CE1EMASTL101
C051	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C053	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C060	CERAMIC CAP.(AX) B K 0.1µF/25V	CCA1EKT0B104
C253	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C255	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C256	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C257	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C308	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C309	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C310	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C311	CHIP CERAMIC CAP. CH J 390pF/50V or	CHD1JJBCH391
	CHIP CERAMIC CAP. CH J 390pF/50V or	CHD1JJ3CH391
	CHIP CERAMIC CAP. CG J 390pF/50V	CHD1JJ3CG391
C312	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C314	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C315	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C320	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C321	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C322	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C324	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C325	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C326	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C329	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C330	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C332	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C333	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C335	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C336	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C337	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C339	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C340	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C341	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C344	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C345	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C346	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C347	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C348	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C349	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473

Ref. No.	Description	Part No.
C352	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C353	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C354	CHIP CERAMIC CAP. CH J 68pF/50V or	CHD1JJBCH680
	CHIP CERAMIC CAP. CH J 68pF/50V or	CHD1JJ3CH680
	CHIP CERAMIC CAP. CG J 68pF/50V	CHD1JJ3CG680
C391	ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C392	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C401	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C402	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C403	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C404	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C405	ELECTROLYTIC CAP. 33µF/6.3V M H7	CE0KMAVSL330
C406	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C408	ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C409	CHIP CERAMIC CAP.(MELF) Y K 4700pF/16V or	CZM1CKB0Y472
	CHIP CERAMIC CAP.(MELF) Y K 4700pF/16V	CZM1CK30Y472
C410	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C411	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C413	CHIP CERAMIC CAP. B K 0.012µF/50V or	CHD1JKB0B123
	CHIP CERAMIC CAP. B K 0.012µF/50V	CHD1JK30B123
C415	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C417	CHIP CERAMIC CAP.(MELF) Y K 1000pF/35V or	CZM1GKB0Y102
	CHIP CERAMIC CAP.(MELF) Y K 1000pF/35V	CZM1GK30Y102
C418	CHIP CERAMIC CAP. B K 2700pF/50V or	CHD1JKB0B272
	CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JK30B272
C419	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C421	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C422	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C423	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C424	CERAMIC CAP. B K 470pF/100V	CCD2AKS0B471
C425	FILM CAP.(P) 0.018µF/100V J or	CMA2AJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
C502	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C505	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C507	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C508	CHIP CERAMIC CAP. B K 0.022µF/50V or	CHD1JKB0B223
	CHIP CERAMIC CAP. B K 0.022µF/25V or	CHD1EKB0B223

Ref. No.	Description	Part No.
	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V or	CHD1JK30B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/25V	CHD1EK30B223
C509	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C513	CHIP CERAMIC CAP.(MELF) SL D 10pF/50V or	CZM1JDBSL100
	CHIP CERAMIC CAP.(MELF) SL D 10pF/50V or	CZM1JD3SL100
	CHIP CERAMIC CAP. CH D 10pF/50V or	CHD1JDBCH100
	CHIP CERAMIC CAP. CH D 10pF/50V or	CHD1JD3CH100
	CHIP CERAMIC CAP. CG D 10pF/50V	CHD1JD3CG100
C514	CHIP CERAMIC CAP.(MELF) SL J 22pF/50V or	CZM1JJBSL220
	CHIP CERAMIC CAP.(MELF) SL J 22pF/50V or	CZM1JJ3SL220
	CHIP CERAMIC CAP. CH J 22pF/50V or	CHD1JJBCH220
	CHIP CERAMIC CAP.(1608) CH J 22pF/50V or	CHD1JJ3CH220
	CHIP CERAMIC CAP. CG J 22pF/50V	CHD1JJ3CG220
C515	CHIP CERAMIC CAP.(MELF) SL J 18pF/50V or	CZM1JJBSL180
	CHIP CERAMIC CAP.(MELF) SL J 18pF/50V or	CZM1JJ3SL180
	CHIP CERAMIC CAP. CH J 18pF/50V or	CHD1JJBCH180
	CHIP CERAMIC CAP. CH J 18pF/50V or	CHD1JJ3CH180
	CHIP CERAMIC CAP. CG J 18pF/50V	CHD1JJ3CG180
C521	ELECTROLYTIC CAP. 47µF/25V M H7	CE1EMAVSL470
C522	CHIP CERAMIC CAP. B K 4700pF/50V or	CHD1JKB0B472
	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C523	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V or	CZM1JJBSL101
	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJ3SL101
C525	CHIP CERAMIC CAP. B K 4700pF/50V or	CHD1JKB0B472
	CHIP CERAMIC CAP.(1608) B K 4700pF/50V	CHD1JK30B472
C527	CHIP CERAMIC CAP. B K 0.047µF/50V or	CHD1JKB0B473
	CHIP CERAMIC CAP. B K 0.047µF/25V or	CHD1EKB0B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V or	CHD1JK30B473
	CHIP CERAMIC CAP.(1608) B K 0.047µF/25V	CHD1EK30B473
C529	CHIP CERAMIC CAP. B K 0.022µF/50V or	CHD1JKB0B223
	CHIP CERAMIC CAP. B K 0.022µF/25V or	CHD1EKB0B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V or	CHD1JK30B223
	CHIP CERAMIC CAP.(1608) B K 0.022µF/25V	CHD1EK30B223
C530	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C531	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C532	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C533	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C534	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C535	ELECTROLYTIC CAP. 22µF/10V M H7	CE1AMAVSL220
C536	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C537	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C540	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C701	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C702	CHIP CERAMIC CAP. B K 2200pF/50V or	CHD1JKB0B222
	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JK30B222
C703	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C704	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C707	FILM CAP.(P) 0.039µF/50V J or	CMA1JJS00393
	FILM CAP.(P) 0.039µF/50V J	CA1J393MS029

Ref. No.	Description	Part No.
C708	ELECTROLYTIC CAP. 0.22µF/50V M or	CE1JMASDLR22
	ELECTROLYTIC CAP. 0.22µF/50V M	CE1JMASTLR22
C709	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C751	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C752	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V or	CZM1GKB0Y222
	CHIP CERAMIC CAP.(MELF) Y K 2200pF/35V	CZM1GK30Y222
C762	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C766	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V or	CZM1CZB0F103
	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZ30F103
C772	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C773	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C777	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C780	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C781	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C1015	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C1038	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1039	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1040	ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
	ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C1042	ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C1070	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1071	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1201	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1202	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1205	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJBCH221
	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJ3CH221
	CHIP CERAMIC CAP. CG J 220pF/50V	CHD1JJ3CG221
C1206	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJBCH221
	CHIP CERAMIC CAP. CH J 220pF/50V or	CHD1JJ3CH221
	CHIP CERAMIC CAP. CG J 220pF/50V	CHD1JJ3CG221
C1207	CHIP CERAMIC CAP. CH J 47pF/50V or	CHD1JJBCH470
	CHIP CERAMIC CAP.(1608) CH J 47pF/50V or	CHD1JJ3CH470
	CHIP CERAMIC CAP. CG J 47pF/50V	CHD1JJ3CG470
C1208	CHIP CERAMIC CAP. CH J 47pF/50V or	CHD1JJBCH470
	CHIP CERAMIC CAP.(1608) CH J 47pF/50V or	CHD1JJ3CH470
	CHIP CERAMIC CAP. CG J 47pF/50V	CHD1JJ3CG470
C1221	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1222	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMASSL100
C1223	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C1224	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C1245	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1246	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1247	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1249	ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C1350	CHIP CERAMIC CAP. B K 0.47µF/10V or	CHD1AKB0B474
	CHIP CERAMIC CAP.(1608) B K 0.47µF/10V	CHD1AK30B474
C1351	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C1353	CHIP CERAMIC CAP. B K 0.47µF/10V or	CHD1AKB0B474
	CHIP CERAMIC CAP.(1608) B K 0.47µF/10V	CHD1AK30B474
C1354	CHIP CERAMIC CAP. CH J 100pF/50V or	CHD1JJBCH101
	CHIP CERAMIC CAP.(1608) CH J 100pF/50V or	CHD1JJ3CH101
	CHIP CERAMIC CAP. CG J 100pF/50V	CHD1JJ3CG101
C1355	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
C1358	CHIP CERAMIC CAP. CH D 9pF/50V or	CHD1JDBCH9R0
	CHIP CERAMIC CAP. CH D 9pF/50V	CHD1JD3CH9R0
C1394	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMASSL470
C1395	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1402	PCB JUMPER D0.6-P5.0	JW5.0T
C1421	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1422	CHIP CERAMIC CAP. B K 0.1µF/25V or	CHD1EKB0B104
	CHIP CERAMIC CAP. B K 0.1µF/16V or	CHD1CKB0B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V or	CHD1EK30B104
	CHIP CERAMIC CAP.(1608) B K 0.1µF/16V	CHD1CK30B104
C1441	CHIP CERAMIC CAP. B K 0.33µF/10V or	CHD1AKB0B334
	CHIP CERAMIC CAP.(1608) B K 0.33µF/10V	CHD1AK30B334
C1442	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1461	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1462	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1481	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1482	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1523	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
C1524	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C1531	CHIP CERAMIC CAP. B K 0.01µF/50V or	CHD1JKB0B103
	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C1532	ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C2002	CHIP CERAMIC CAP. B K 1000pF/50V or	CHD1JKB0B102
	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JK30B102
C2004	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C2012	CHIP CERAMIC CAP. F Z 0.1µF/50V or	CHD1JZB0F104
	CHIP CERAMIC CAP. F Z 0.1µF/25V or	CHD1EZB0F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V or	CHD1JZ30F104
	CHIP CERAMIC CAP.(1608) F Z 0.1µF/25V or	CHD1EZ30F104
	CHIP CERAMIC CAP. FZ Z 0.1µF/50V	CHD1JZ3FZ104
CONNECTORS		
CN1001	FMN CONNECTOR, SIDE 22P 22FMN-STRK or	JCFNG22JG004
	FPC/FFC CONNECTOR, 22P HLW22R-2C7	JCHWJ22JE001
CN1003	CONNECTOR BASE, 15P TUC-P15P-B1	J3TUA15TG001

Ref. No.	Description	Part No.
CN1601	FMN CONNECTOR, TOP 16P 16FMN-BTK	JCFNG16JG001
CN2001	FMN CONNECTOR, TOP 4P 04FMN-BTRK	JCFNG04JG002
	DIODES	
D019	RECTIFIER DIODE RL201	NDQZ000RL201
D052	ZENER DIODE DZ-10BSBT265 or	NDTB00DZ10BS
	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D071	PCB JUMPER D0.6-P7.5	JW7.5T
D080	RECTIFIER DIODE 1N4005	NDQZ001N4005
D081	RECTIFIER DIODE 1N4005	NDQZ001N4005
D100	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D101	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D501	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D555	LED MIE-534A2 or	NPZZM1E534A2
	LED SIR-563ST3F P or	QPQPS1R563ST
	LED SIR-563ST3F Q	QPQQS1R563ST
D701	ZENER DIODE DZ-33BSDT265 or	NDTD00DZ33BS
	ZENER DIODE MTZJT-7733D	QDTD00MTZJ33
D702	ZENER DIODE DZ-6.8BSBT265 or	NDTB0DZ6R8BS
	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D1030	PCB JUMPER D0.6-P5.0	JW5.0T
D1033	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1035	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1036	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1037	PCB JUMPER D0.6-P7.5	JW7.5T
D1038	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1040	PCB JUMPER D0.6-P7.5	JW7.5T
D1041	PCB JUMPER D0.6-P10.0	JW10.0T
D1058	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1301	ZENER DIODE DZ-5.6BSBT265 or	NDTB0DZ5R6BS
	ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D2010	PCB JUMPER D0.6-P5.0	JW5.0T
LED EXCLUSIVE(A)		
D564	LED(RED) 204HD/E	NPQZ00204HDE
D565	LED(RED) 204HD/E	NPQZ00204HDE
D566	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D567	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D2001	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D2002	LED(GREEN) 204-10GD/S957	NPQZ10GDS957
LED EXCLUSIVE(B)		
D564	LED(RED) LTL-4211N	NPQZLTL4211N
D565	LED(RED) LTL-4211N	NPQZLTL4211N
D566	LED(GREEN) LTL-4231N	NPQZLTL4231N
D567	LED(GREEN) LTL-4231N	NPQZLTL4231N
D2001	LED(GREEN) LTL-4231N	NPQZLTL4231N
D2002	LED(GREEN) LTL-4231N	NPQZLTL4231N
	ICS	
IC301	IC:Y/C/A LA71091M	QSZBA0RSY012
IC501	MICROCONTROLLER 8BIT MN101D08EFD2	QSZAC0RMS006
IC751	IC:SWITCH TC4053BF(N) or	QSMBA0STS002
	IC:SWITCH BU4053BCF or	QSMDA0SRM010
	IC:ANALOG MULTIPLEXERS CD4053BCSJX	NSZBA0TF3071
IC1002	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC1004	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
IC1201	IC:OP AMP KIA4558P or	NSZBA0SJY004
	IC:OP AMP NJM4558D	QSZBA0SJR006
IC1402	DRIVER FOR DVD MM1622XJBE	QSZBA0TMM085

Ref. No.	Description	Part No.
	COILS	
L251	INDUCTOR 22µH-K-26T	LLAXKATTU220
L303	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L304	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L421	INDUCTOR 47µH-K-5FT	LLARKBSTU470
L422	PCB JUMPER D0.6-P5.0	JW5.0T
L501	PCB JUMPER D0.6-P5.0	JW5.0T
L502	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L503	INDUCTOR 12µH-K-26T	LLAXKATTU120
L701	INDUCTOR 4.7µH-K-26T	LLAXKATTU4R7
L1009	PCB JUMPER D0.6-P5.0	JW5.0T
L1010	PCB JUMPER D0.6-P5.0	JW5.0T
L1350	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
L1351	INDUCTOR(0.47µH K) LAP02TAR47K	LLAXKATTUR47
L1401	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1441	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1442	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1461	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1481	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
L1521	INDUCTOR 47µH-K-5FT	LLARKBSTU470
L2001	INDUCTOR(100µH K) LAP02TA101K	LLAXKATTU101
	TRANSISTORS	
Q052	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q055	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q056	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q057	TRANSISTOR KTC3199(BL) or	NQS50KTC3199
	TRANSISTOR 2SC2785(K) or	QQSK02SC2785
	TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q301	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q302	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q303	TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q391	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q421	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q422	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q423	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA
Q424	TRANSISTOR KTC3198(Y) or	NQSY0KTC3198
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC536NF-NPA-AT or	QQSFC536NNPA
	TRANSISTOR 2SC536NG-NPA-AT	QQSGC536NNPA

Ref. No.	Description	Part No.
Q425	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q501	TRANSISTOR KTC3199(BL) or	NQS50KTC3199
	TRANSISTOR 2SC2785(K) or	QQSK02SC2785
	TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q506	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q563	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q565	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q566	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q567	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q760	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q762	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q763	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1004	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q1005	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1006	TRANSISTOR KTA1267(Y) or	NQSY0KTA1267
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1175(J) or	QQSJ02SA1175
	TRANSISTOR 2SA1175(H) or	QQSH02SA1175
	TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q1011	TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q1201	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1202	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1203	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1204	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1351	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1385	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q2001	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q2002	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q2003	TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC1815-Y(TPE2) or	QQSY02SC1815
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
	RESISTORS	
R056	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R057	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R058	CHIP RES.(1608) 1/10W J 180 Ω or	RRXAJB5Z0181
	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJR5Z0181

Ref. No.	Description	Part No.
R060	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R061	CARBON RES. 1/6W J 1.2k Ω or	RCX6JATZ0122
	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R062	CARBON RES. 1/6W J 5.6k Ω or	RCX6JATZ0562
	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R063	PCB JUMPER D0.6-P5.0	JW5.0T
R073	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R075	CARBON RES. 1/6W J 4.7k Ω or	RCX6JATZ0472
	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R087	CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R088	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R090	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R091	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R253	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R254	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R303	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R304	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R305	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R306	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R309	CHIP RES.(1608) 1/10W J 15k Ω or	RRXAJB5Z0153
	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R311	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R312	CHIP RES.(1608) 1/10W J 1.2k Ω or	RRXAJB5Z0122
	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R313	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R322	CHIP RES.(1608) 1/10W J 5.6M Ω or	RRXAJB5Z0565
	CHIP RES.(1608) 1/10W J 5.6M Ω	RRXAJR5Z0565
R323	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R324	CHIP RES.(1608) 1/10W J 82k Ω or	RRXAJB5Z0823
	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJR5Z0823
R326	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R327	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R328	CHIP RES.(1608) 1/10W J 680k Ω or	RRXAJB5Z0684
	CHIP RES.(1608) 1/10W J 680k Ω	RRXAJR5Z0684
R329	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R330	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R331	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R332	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R341	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R342	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R343	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R357	PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Description	Part No.
R391	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R392	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R395	PCB JUMPER D0.6-P5.0	JW5.0T
R397	CHIP RES.(1608) 1/10W J 220 Ω or	RRXAJB5Z0221
	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R401	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R402	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R407	CHIP RES.(1608) 1/10W J 2.2M Ω or	RRXAJB5Z0225
	CHIP RES.(1608) 1/10W J 2.2M Ω	RRXAJR5Z0225
R408	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R409	CHIP RES.(1608) 1/10W J 3.3k Ω or	RRXAJB5Z0332
	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R410	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R411	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R412	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R413	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R414	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R415	CHIP RES.(1608) 1/10W J 12k Ω or	RRXAJB5Z0123
	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R416	CHIP RES.(1608) 1/10W J 330k Ω or	RRXAJB5Z0334
	CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R417	CHIP RES.(1608) 1/10W J 150 Ω or	RRXAJB5Z0151
	CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R418	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R419	CHIP RES.(1608) 1/10W J 910 Ω or	RRXAJB5Z0911
	CHIP RES.(1608) 1/10W J 910 Ω	RRXAJR5Z0911
R421	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R422	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R424	CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R425	CARBON RES. 1/6W J 100 Ω or	RCX6JATZ0101
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R426	CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R428	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R429	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R453	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R454	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R465	CHIP RES.(1608) 1/10W J 27k Ω or	RRXAJB5Z0273
	CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R466	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R502	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R503	CHIP RES.(1608) 1/10W J 820 Ω or	RRXAJB5Z0821
	CHIP RES.(1608) 1/10W J 820 Ω	RRXAJR5Z0821

Ref. No.	Description	Part No.
R504	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R506	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R508	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R511	CHIP RES.(1608) 1/10W J 39k Ω or	RRXAJB5Z0393
	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R517	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R518	CHIP RES.(1608) 1/10W J 220k Ω or	RRXAJB5Z0224
	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R521	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R522	PCB JUMPER D0.6-P5.0	JW5.0T
R523	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R524	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R525	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R526	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R527	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R528	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R529	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R530	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R531	CARBON RES. 1/6W G 4.7k Ω or	RCX6GATZ0472
	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R532	CARBON RES. 1/6W G 1.5k Ω or	RCX6GATZ0152
	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R533	CARBON RES. 1/6W G 22k Ω or	RCX6GATZ0223
	CARBON RES. 1/4W G 22k Ω	RCX4GATZ0223
R534	CARBON RES. 1/6W G 470 Ω or	RCX6GATZ0471
	CARBON RES. 1/4W G 470 Ω	RCX4GATZ0471
R535	CARBON RES. 1/6W G 10k Ω or	RCX6GATZ0103
	CARBON RES. 1/4W G 10k Ω	RCX4GATZ0103
R536	CARBON RES. 1/6W G 3.6k Ω or	RCX6GATZ0362
	CARBON RES. 1/4W G 3.6k Ω	RCX4GATZ0362
R537	CHIP RES.(1608) 1/10W J 33k Ω or	RRXAJB5Z0333
	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R540	CHIP RES.(1608) 1/10W J 390k Ω or	RRXAJB5Z0394
	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R541	CHIP RES.(1608) 1/10W J 390k Ω or	RRXAJB5Z0394
	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R542	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R543	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R544	CHIP RES.(1608) 1/10W J 18k Ω or	RRXAJB5Z0183
	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R545	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R546	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R551	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R561	CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R566	CARBON RES. 1/6W J 220 Ω or	RCX6JATZ0221

Ref. No.	Description	Part No.
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R567	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R568	CARBON RES. 1/6W J 220 Ω or	RCX6JATZ0221
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R570	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R573	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R574	CARBON RES. 1/6W J 150 Ω or	RCX6JATZ0151
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R575	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R576	CARBON RES. 1/6W J 3.9k Ω or	RCX6JATZ0392
	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R583	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R590	CHIP RES.(1608) 1/10W J 1.5k Ω or	RRXAJB5Z0152
	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R593	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R594	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R606	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R607	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R610	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R612	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R614	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R615	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R618	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R620	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R625	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R701	CHIP RES.(1608) 1/10W J 330 Ω or	RRXAJB5Z0331
	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R702	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R703	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R704	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R705	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R707	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R751	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R752	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R753	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R756	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R757	CHIP RES.(1608) 1/10W J 47k Ω or	RRXAJB5Z0473
	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R777	CARBON RES. 1/6W J 27k Ω or	RCX6JATZ0273
	CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273

Ref. No.	Description	Part No.
R778	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R779	CARBON RES. 1/6W J 330 Ω or	RCX6JATZ0331
	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R780	CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R782	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R783	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R784	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R785	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R786	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R787	CHIP RES.(1608) 1/10W J 4.7k Ω or	RRXAJB5Z0472
	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R1025	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1044	CHIP RES.(1608) 1/10W J 220k Ω or	RRXAJB5Z0224
	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R1059	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1068	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1076	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R1077	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R1080	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1085	CHIP RES. 1/10W F 120 Ω or	RRXAFB5H1200
	CHIP RES. 1/10W F 120 Ω or	RRXAFB5Z1200
	CHIP RES. 1/10W F 120 Ω	RRXAFR5H1200
R1086	CHIP RES.(1608) 1/10W F 1.0k Ω or	RRXAFB5H1001
	CHIP RES.(1608) 1/10W F 1.0k Ω or	RRXAFB5Z1001
	CHIP RES.(100PPM) 1/10W F 1.0k Ω	RRXAFR5H1001
R1087	CHIP RES.(1608) 1/10W J 680 Ω or	RRXAJB5Z0681
	CHIP RES.(1608) 1/10W J 680 Ω	RRXAJR5Z0681
R1090	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R1091	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1203	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1204	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1205	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5H2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5Z2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFR5H2002
	CHIP RES.(1608) 1/10W F 20k Ω	RRXAFR5Z2002
R1206	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5H2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFB5Z2002
	CHIP RES.(1608) 1/10W F 20k Ω or	RRXAFR5H2002
	CHIP RES.(1608) 1/10W F 20k Ω	RRXAFR5Z2002
R1207	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R1208	CHIP RES.(1608) 1/10W J 8.2k Ω or	RRXAJB5Z0822
	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R1209	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5H3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5Z3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFR5H3002
	CHIP RES.(1608) 1/10W F 30k Ω	RRXAFR5Z3002
R1210	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5H3002

Ref. No.	Description	Part No.
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFB5Z3002
	CHIP RES.(1608) 1/10W F 30k Ω or	RRXAFR5H3002
	CHIP RES.(1608) 1/10W F 30k Ω	RRXAFR5Z3002
R1211	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1212	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1221	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1222	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1223	CHIP RES.(1608) 1/10W J 470 Ω or	RRXAJB5Z0471
	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1224	CHIP RES.(1608) 1/10W J 470 Ω or	RRXAJB5Z0471
	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1225	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1226	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1233	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1235	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1236	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1237	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1238	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1239	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1240	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1245	CHIP RES.(1608) 1/10W J 10 Ω or	RRXAJB5Z0100
	CHIP RES.(1608) 1/10W J 10 Ω	RRXAJR5Z0100
R1351	CHIP RES.(1608) 1/10W J 1.8k Ω or	RRXAJB5Z0182
	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R1352	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1353	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1354	CHIP RES.(1608) 1/10W J 220 Ω or	RRXAJB5Z0221
	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R1355	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1356	CHIP RES.(1608) 1/10W J 100k Ω or	RRXAJB5Z0104
	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1371	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1392	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1396	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1397	CHIP RES.(1608) 1/10W J 100 Ω or	RRXAJB5Z0101
	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R1402	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1422	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1442	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1443	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750

Ref. No.	Description	Part No.
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1462	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1482	CHIP RES.(1608) 1/10W J 75 Ω or	RRXAJB5Z0750
	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1612	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2001	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2002	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2003	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2005	CHIP RES.(1608) 1/10W J 6.8k Ω or	RRXAJB5Z0682
	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R2006	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2028	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2031	CHIP RES.(1608) 1/10W J 22k Ω or	RRXAJB5Z0223
	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R2051	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R2052	CHIP RES.(1608) 1/10W J 3.9k Ω or	RRXAJB5Z0392
	CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R2053	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2054	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R2055	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2056	CHIP RES.(1608) 1/10W J 10k Ω or	RRXAJB5Z0103
	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R2063	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
	SWITCHES	
SW502	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW503	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW504	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW505	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW511	LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW512	ROTARY MODE SWITCH SSS-50MD or	SSR0106KB002
	ROTARY MODE SWITCH R8100245	SSR0106U3002
SW2002	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW2003	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
2B11	SHIELD ASSEMBLY H9200UD	0VM413279
2B15	BUSH, LED(F) H3700UD	0VM409508
2B33	HEATSINK H9400UD	0VM414786
2L013	SCREW, S-TIGHT M3X8 BIND + CHROME	GBMS3080

Ref. No.	Description	Part No.
JC02	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
JK751	RCA JACK MSP-213V1-324 PBSN	JXRL030LY064
JK752	RCA JACK MSP-382V-14 PBSN	JXRL020LY074
JK753	RCA JACK(YELLOW) MSP-281V4-B	JXRL010LY003
JK755	RCA JACK(WHITE) MSP-281V1-B	JXRL010LY005
JK756	RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JK1202	RCA JACK(BLACK) MSP-281V2-B	JXRL010LY062
JK1401	S TYPE JACK MDC-050V-2.4	JXEL040LY001
JK1403	RCA JACK MSP-213V1-652 PBSN	JXRL030LY061
RM2001	REMOTE RECEIVER MIM-93M6DKF or	USESJRSUNT01
	REMOTE RECEIVER PIC-37042LU	USESJRSKK033
TP301	PCB JUMPER D0.6-P10.0	JW10.0T
TP302	PCB JUMPER D0.6-P16.0	JW16.0T
TP502	PCB JUMPER D0.6-P5.0	JW5.0T
TP505	PCB JUMPER D0.6-P5.0	JW5.0T
TP506	PCB JUMPER D0.6-P14.0	JW14.0T
TP507	PCB JUMPER D0.6-P7.5	JW7.5T
TP513	PCB JUMPER D0.6-P10.0	JW10.0T
TP751	PCB JUMPER D0.6-P10.0	JW10.0T
TP753	PCB JUMPER D0.6-P7.5	JW7.5T
TP754	PCB JUMPER D0.6-P7.5	JW7.5T
TU701	TUNER UNIT VH025AP or	UTUNNTUSP024
	TUNER UNIT TMZH2-001A or	UTUNNTUAL030
	TUNER UNIT TMZH2-010B or	UTUNNTUAL034
	TUNER UNIT VH025AFE	UTUNNTUSP026
VR501	CARBON P.O.T. 100k Ω B	VRCB104HH014
W011	FFC CABLE, 22P FFC/P1.00/250	WX1H9400-011
W014	FFC CABLE, 16P FFC/P1.00/220	WX1H9400-014
W017	FFC CABLE, 4P FFC/P1.00/210	WX1H9400-017
X301	X'TAL 3.579545MHz(20PPM) or	FXC355LLN003
	X'TAL 3.579545MHz(20PPM) or	FXC355LCHE01
	X'TAL 3.579545MHz(20PPM) or	FXC355LDS001
	X'TAL 3.579545MHz(20PPM)	FXC355LDYN01
X502	X'TAL 32.768kHz(20PPM) or	FXC323LQUA01
	X'TAL 32.768kHz(20PPM) or	FXC323LDS002
	X'TAL 32.768kHz(20PPM)	FXC323LCHE01

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA(MCV-B) Consists of the following	----------
	DIODES	
LED EXCLUSIVE(A)		
D561	LED(RED) 204HD/E	NPQZ00204HDE
LED EXCLUSIVE(B)		
D561	LED(RED) LTL-4211N	NPQZLTL4211N
	RESISTORS	
R584	CHIP RES.(1608) 1/10W 0 Ω or	RRXAZB5Z0000
	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R585	CHIP RES.(1608) 1/10W J 1k Ω or	RRXAJB5Z0102
	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R586	CHIP RES.(1608) 1/10W J 1.2k Ω or	RRXAJB5Z0122
	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R587	CHIP RES.(1608) 1/10W J 1.5k Ω or	RRXAJB5Z0152
	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R588	CHIP RES.(1608) 1/10W J 2.2k Ω or	RRXAJB5Z0222
	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
	SWITCHES	

Ref. No.	Description	Part No.
SW501	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW508	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW509	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW513	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW514	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
2B13	BUSH, LED(E) H1600UD	0VM408832
W104	PARALLEL WIRE, 3P AWG26#2651/P2.0/125	WX1H9400-104

DVD OPEN/CLOSE CBA

Ref. No.	Description	Part No.
	DVD OPEN/CLOSE CBA(MCV-C) Consists of the following	----------
	SWITCHES	
SW2001	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
W103	PARALLEL WIRE, 2P AWG26#2651/P2.0/100	WX1H9400-103

DVD SW CBA

Ref. No.	Description	Part No.
	DVD SW CBA(MCV-D) Consists of the following	----------
	SWITCHES	
SW2005	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW2006	TACT SWITCH KSM0614B or	SST0101HH013
	TACT SWITCH SKQSAF001A or	SST0101AL041
	TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
	MISCELLANEOUS	
W105	PARALLEL WIRE, 3P AWG26#2651/P2.0/100	WX1H9400-105

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists of the following	0VSA13627
	TRANSISTORS	
Q503	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F
Q504	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22F	NPWZ1D32A22F

PSV CBA

Ref. No.	Description	Part No.
	PSV CBA Consists of the following	0VSA14711
	POWER SUPPLY CBA (PSV-A) JUNCTION CBA (PSV-B)	---------- ----------

POWER SUPPLY CBA

Ref. No.	Description	Part No.
	POWER SUPPLY CBA (PSV-A) Consists of the following	----------
	CAPACITORS	
C013	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C017	CERAMIC CAP. YV Z 0.01µF/50V	CCD1JZSYV103
C018	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMASDL471
	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASTL471
C020	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
	ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZPTL102
C021	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C1001⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE13
⚠	METALLIZED FILM CAP. 0.022µF/275V K or	CT2E223HJE05
⚠	METALLIZED FILM CAP. 0.022µF/250V K or	CT2E223DC011
⚠	METALLIZED FILM CAP. 0.022µF/250V M	CT2E223MS037
C1002	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C1003	CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C1004	ELECTROLYTIC CAP. 220µF/200V M	CA2D221S6008
C1005	CERAMIC CAP. B K 120pF/500V	CCD2JKP0B121
C1006⚠	SAFETY CAP. 3300pF/250V or	CCG2EMA0F332
⚠	SAFETY CAP. 3300pF/250V	CCD2EMA0E332
C1007	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1008	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1013	CERAMIC CAP.(AX) X K 3300pF/16V	CCA1CKT0X332
C1014	ELECTROLYTIC CAP. 470µF/25V M or	CE1EMASDL471
	ELECTROLYTIC CAP. 470µF/25V M	CE1EMASTL471
C1022	CHIP CERAMIC CAP. B K 5600pF/50V	CHD1JK30B562
C1023	CERAMIC CAP. B K 470pF/100V	CCD2AKS0B471
C1029	CERAMIC CAP.(AX) X K 5600pF/16V	CCA1CKT0X562
C1032	ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1033	CERAMIC CAP. YV Z 0.022µF/50V	CCD1JZSYV223
	DIODES	
D013	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D015	SCHOTTKY BARRIER DIODE SB360	NDQZ000SB360
D016	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D018	ZENER DIODE DZ-8.2BSAT265 or	NDTA0DZ8R2BS
	ZENER DIODE MTZJT-778.2A	QDTA0MTZJ8R2
D020	PCB JUMPER D0.6-P5.0	JW5.0T
D030	RECTIFIER DIODE BA157 or	NDQZ000BA157
	FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D1001	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1002	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1003	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1004	RECTIFIER DIODE 1N4005	NDQZ001N4005
D1006	PCB JUMPER D0.6-P5.0	JW5.0T
D1007	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
D1008	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***

Ref. No.	Description	Part No.
D1010	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D1011	RECTIFIER DIODE BA158 or	NDQZ000BA158
	RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D1012	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1018	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1020	SCHOTTKY BARRIER DIODE SB140 or	NDQZ000SB140
	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1022	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1024	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1025	SWITCHING DIODE 1N4148M or	NDTZ01N4148M
	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1031	PCB JUMPER D0.6-P5.0	JW5.0T
D1032	PCB JUMPER D0.6-P5.0	JW5.0T
	ICS	
IC1001⚠	PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
⚠	PHOTOCOUPLER EL817B or	NPEB000EL817
⚠	PHOTOCOUPLER EL817C	NPEC000EL817
IC1006	IC:SHUNT REGULATOR KIA431-AT or	NSZLA0TJY001
	IC:SHUNT REGULATOR TL431A-TA or	NSZBA0TQ2003
	IC KIA431A-AT or	NSZBA0TJY018
	IC:SHUNT REGULATOR TL431-TA	NSZBA0TQ2002
	COILS	
L003	BEAD CORE B16 RH 3.5X10X1.3	XL03010XM001
L009	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
L1001⚠	LINE FILTER 27MH TLF14CB2730R4 or	LLBG00ZTU034
⚠	LINE FILTER 27MH CSA-LF199A	LLBG00ZSA008
L1007	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
L1020	CHOKE COIL 47μH-K or	LLBD00PKV007
	CHOKE COIL 47μH-K or	LLBD00PKV005
	CHOKE COIL 47μH-K	LLBD00PKT001
	TRANSISTORS	
Q1001	FET 2SK3543	QFWZ02SK3543
Q1003	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1008	TRANSISTOR KTC3199(Y)	NQSY0KTC3199
	RESISTORS	
R001	GLASS GLAZE RES. 1/2W J 3.3M Ω or	RXX2JZLZ0335
	CARBON RES. 1/2W J 3.3M Ω	RCX2335DP001
R037	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R082	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R1004	METAL OXIDE FILM RES. 2W J 82k Ω or	RN02JZLZ0823
	METAL OXIDE FILM RES. 2W J 82k Ω	RN02JZQZ0823
R1005	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1006	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1008	CARBON RES. 1/4W G 1k Ω	RCX4GATZ0102
R1010	CARBON RES. 1/6W J 6.8k Ω or	RCX6JATZ0682
	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1011	METAL OXIDE FILM RES. 1W J 0.68 Ω or	RN01R68ZU001
	METAL OXIDE FILM RES. 1W J 0.68 Ω	RN01R68KE009
R1019	CHIP RES.(1608) 1/10W F 2.2k Ω or	RRXAFR5H2201
	CHIP RES.(1608) 1/10W F 2.2k Ω	RRXAFR5Z2201
R1020	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152

Ref. No.	Description	Part No.
R1021	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1022	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R1023	CHIP RES.(1608) 1/10W F 2k Ω or	RRXAFR5H2001
	CHIP RES.(1608) 1/10W F 2k Ω	RRXAFR5Z2001
R1024	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R1029	CARBON RES. 1/6W J 82k Ω or	RCX6JATZ0823
	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R1032	CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1034	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1035	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1036	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1037	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1038	CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1039	CARBON RES. 1/6W J 470k Ω or	RCX6JATZ0474
	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R1043	METAL OXIDE FILM RES. 1W J 2.7 Ω or	RN01JZLZ02R7
	METAL OXIDE FILM RES. 1W J 2.7 Ω	RN01JZQZ02R7
R1095	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
	MISCELLANEOUS	
AC1001 ⚠	AC CORD A0A0280-007 or	WAC0172LTE04
⚠	AC CORD PB8K9F9110A-057 or	WAC0172LW008
⚠	AC CORD PB8B2F9110A-057 or	WAC0172LW011
⚠	AC CORD A0A0280-017 or	WAC0172LTE06
⚠	AC CORD WAC0172ADE01	WAC0172ADE01
F1001⚠	FUSE SIC 1A 250V U/C T or	PAGG20CW3102
⚠	FUSE 1A/250V	PAGG20CAG102
FH1001	FUSE HOLDER MSF-015	XH01Z00LY001
FH1002	FUSE HOLDER MSF-015	XH01Z00LY001
T001⚠	SWITCHING TRANSFOMER CSA-SW0276A	LTT00CPSA140
W101	PARALLEL WIRE, 8P AWG26#2651/P2.0/65	WX1H9400-101
W102	PARALLEL WIRE, 7P AWG26#2651/P2.0/50	WX1H9400-102

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA (PSV-B) Consists of the following	---------
	CONNECTOR	
CN1005	CONNECTOR, 15P TUC-P15X-B1	JCTUS15TG001

DECK PARTS LIST

Ref.No	Description	Part No.
B2	CYLINDER ASSEMBLY MK12 NTSC 4HD	N1648CYL
B3	LOADING MOTOR ASSEMBLY MK12	0VSA13665
B8	PULLEY ASSEMBLY MK12	0VSA13500
B9	MOVING GUIDE S PREPARATION MK12	0VSA13560
B10	MOVING GUIDE T PREPARATION MK12	0VSA13562
B11	LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12	LOADING ARM(SP) ASSEMBLY MK12	0VSA13299
B31	AC HEAD ASSEMBLY MK12	0VSA13275
B35	TAPE GUIDE ARM ASSEMBLY MK12	0VSA13277
B37	CAPSTAN MOTOR 288/VCCM012	N9670CML
B52	CAP BELT MK10	0VM411138
B73	FE HEAD ASSEMBLY MK11 or	N9742FEL
	FE HEAD ASSEMBLY MK11 or	N9743FEL
	FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
	FE HEAD(MK11) VTR-1X2ERS11-148 or	DHVEC01TE004
	FE HEAD(MK12) VTR-1X2ERS11-155 or	DHVEC01TE005
	FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74	PRISM MK10	0VM202870
B121	WORM MK12	0VM414091
B126	PULLEY MK12	0VM414330B
B133	IDLER GEAR MK12	0VM305738
B134	IDLER ARM MK12	0VM305739
B148	TG CAP MK11	0VM412972
B300	C DRIVE LEVER(TU) MK12	0VM203773
B303	F DOOR OPENER MK12 or	0VM203751C
	F DOOR OPENER MK12	0VM203751
B313	C DRIVE SPRING MK12	0VM414145
B347	GUIDE HOLDER A MK10	0VM304920
B354	SLIDER(TU) MK12	0VM101172F
B355	SLIDER(SP) MK12 or	0VM101182F
	SLIDER(SP) SUB ASSEMBLY MK12 or	0VDM12542
	SLIDER(SP) MK12	0VM101182H
B359	CLEANER LEVER MK10	0VM304413
B360	CLEANER ROLLER MK9	0VM410032C
B361	CL POST MK10	0VM411114
B410	PINCH ARM(A) ASSEMBLY(4) MK12 or	0VSA13572
	PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411	PINCH SPRING MK12	0VM414644
B414	M BRAKE(SP) ASSEMBLY MK12	0VSA13282
B416	M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417	TENSION SPG(3002645) MK12	0VM414221F
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B482	CASSETTE PLATE MK12	0VM203749
B483	LOCK LEVER MK12	0VM414095
B487	BAND BRAKE(SP) MK12	0VM305723
B488	MODE LEVER MK12	0VM101173
B491	CAM GEAR(A) MK12	0VM101174
B492	MODE GEAR MK12	0VM203769
B494	C DOOR OPENER MK12	0VM305719
B499	T LEVER HOLDER MK12	0VM305729
B501	WORM HOLDER MK12 or	0VM203767
	WORM HOLDER(R) MK12	0VM204324
B502	CAM GEAR(B) MK12	0VM305721
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121

Ref.No	Description	Part No.
B513	CAM WASHER MK12	0VM414741
B514	SCREW RACK MK10	0VM411535
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B520	TU BRAKE SPRING MK12	0VM414285
B521	REV BRAKE SPRING MK12	0VM414222
B522	TG POST ASSEMBLY MK11	0VSA12080
B525	LDG BELT MK11	0VM412804
B529	CLEANER ASSEMBLY MK10	0VSA11161
B553	REV SPRING MK11	0VM412555
B555	RACK ASSEMBLY MK12	0VSA13289
B557	MOTOR PULLEY U5	0VM403205A
B558	LOADING MOTOR M31E-1 R14 7352 or	MMDZB12MM005
	LOADING MOTOR M31E-1 R-14 7376 or	MMDZB12MM003
	LOADING MOTOR M31E-1 R-14 7377	MMDZB12MM006
B559	CLUTCH ASSEMBLY MK12	0VSA13284
B560	KICK SPRING MK10	0VM411475A
B562	C DRIVE LEVER(SP) MK12	0VM203772
B563	SLIDER SHAFT MK12	0VM305762
B564	M GEAR MK12	0VM305735
B565	SENSOR GEAR MK12	0VM305736
B567	PINCH ARM(B) MK12	0VM305718
B568	BT ARM MK12	0VM305728
B570	CAM RACK SPRING(HI) MK11	0VM412923
B571	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL(SP)(D2) MK12	0VM203755
B574	REEL(TU)(D2) MK12	0VM203756
B587	TENSION LEVER ASSEMBLY MK12	0VSA13279
B590	BRAKE ARM(TU) MK12	0VM203752E
B591	BAND BRAKE(TU) MK12	0VM305724C
B592	TG POST MK11	0VM412550
B593	CAM HOLDER(F) ASSEMBLY MK12	0VSA13390
L1051	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341	SCREW, P-TIGHT M2X6 PAN HEAD+	GPMP2060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467	SCREW M2.6X5 WASHER HEAD+	SCM39050

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